NATIONAL MEDAL OF SCIENCE

THE UNIVERSITY
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HEARINGS

BEFORE THE

COMMITTEE ON SCIENCE AND ASTRONAUTICS U.S. HOUSE OF REPRESENTATIVES

EIGHTY-SIXTH CONGRESS

FIRST SESSION

ON

H.R. 6288

JULY 30 AND AUGUST 5, 1959

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NATIONAL MEDAL OF SCIENCE

JULY 30, 1959

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE AND ASTRONAUTICS,
Washington, D.C.

The committee met, pursuant to call, at 10 a.m., Hon. Overton Brooks (chairman of the committee) presiding.

The CHAIRMAN. The committee will come to order.

We have two bills set down this morning for hearing. One of them is H.R. 6288, by Mr. Anfuso, to establish a National Order of Science, and for other purposes, and the other one is H.R. 7981, by me, to amend the National Science Foundation Act of 1950, as amended, to provide for an immediate study of the need for, the proper composition of, and the most efficient means of obtaining a continuous up-to-date national record of scientific and technical personnel throughout the United States.

(The bills referred to are as follows:)

[H.R. 6288, 86th Cong., 1st sess.]

A BILL To establish a National Order of Science to provide recognition for individuals who make outstanding contributions in science and engineering

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That (a) there is hereby established the National Order of Science (hereinafter referred to as the "Order"), which shall consist at any given time of all individuals then living who have been appointed as provided in section 2 of this Act.

(b) Each individual appointed to the Order shall at the time of appointment receive an award consisting of (1) a gold medal, to be known as the National Medal of Science, of such design and bearing such inscriptions as the President, on the basis of recommendations submitted by the National Science Foundation, may prescribe, and (2) a lump-sum payment of such amount, not to exceed $10,000, as the President may prescribe in the case of each individual nominated for appointment to the Order.

SEC. 2. (a) The President shall from time to time nominate for appointment to the Order, on the basis of recommendations received from Government agencies and public or private organizations and other persons whose activities involve or are related to science and engineering or on the basis of such other information and evidence as he deems appropriate, living individuals who in his judgment are deserving of special recognition by reason of their outstanding contributions in the field of science and engineering to the security of the United States or the progress of mankind.

(b) Not more than twenty individuals may be nominated for appointment to the Order in any one calendar year.

(c) An individual may not be nominated for appointment to the Order unless at the time such nomination is made he—

(1) is a citizen of the United States; or

(2) is an alien lawfully admitted to the United States for permanent residence who (A) has filed an application for petition for naturalization in the manner prescribed by section 334(b) of the Immigration and Nationality Act and (B) is not permanently ineligible to become a citizen of the United States.

(d) Each nomination made by the President under this section shall be transmitted to the Committee on Science and Astronautics of the House of Representatives and the Committee on Aeronautical and Space Sciences of the Senate; and each such committee, after such hearings and investigations as it deems appropriate, shall either approve (by the affirmative vote of a majority of its total membership) or reject the nomination as so transmitted. Notice of the approval of any nomination as provided in the preceding sentence shall be furnished the President by each such committee without delay, and upon receipt of such notice from both such committees the President shall appoint the nominee to the Order (and confer the award described in subsection (b) of the first section of this Act) in such manner and with such ceremonies as he may deem appropriate.

SEC. 3. As used in this Act, the term "science" means the physical sciences and mathematics.

SEC. 4. Notwithstanding any other law of the United States, or any law of a State, Territory, Commonwealth, or possession of the United States, no part of the sum referred to in clause (2) of subsection (b) of the first section of this Act, or of the sum referred to in section 5, shall be assignable, or be subject to any tax or to garnishment, attachment, or other legal process, under any circumstances whatsoever, nor shall the payment thereof be anticipated.

SEC. 5. As a special award and an incentive to the development of space travel, there shall be paid to the first living human being who travels in space at orbital velocity (and who at the time of such travel satisfies paragraph (1) or (2) of section 2(c) of this Act), the sum of $100,000. If two or more individuals qualify for the special award described in the preceding sentence, such sum shall be equally divided among them; and if any individual qualifies for such award but dies before he can receive payment, such sum or his share thereof shall be paid to his next of kin as determined in accordance with the laws of the place where he was domiciled at the time of his death. The Administrator of the National Aeronautics and Space Administration shall determine the individual or individuals entitled to receive the special award described in the first sentence of this section and shall without delay transmit such determination to the President, who shall confer the award upon such individual or individuals in such manner and with such ceremonies as he may deem appropriate.

SEC. 6. There are authorized to be appropriated such sums as may be necessary to carry out this Act.

[H.R. 7981, 86th Cong., 1st sess.]

A BILL To amend the National Science Foundation Act of 1950, as amended, to provide for an immediate study of the need for, the proper composition of, and the most efficient means of obtaining a continuous up-to-date national record of scientific and technical personnel throughout the United States

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the National Science Act of 1950, as amended, is further amended by adding a new section 3(d) as follows:

"(d) That there is hereby established a Committee on Scientific and Technical Personnel (hereinafter referred to as 'Committee'), to be composed of a Chairman appointed by the Director of the National Science Foundation and one member selected by the President from the Federal Council for Science and Technology and one member (to be selected by the head of his respective agency) from each of the following: The National Science Foundation, the Bureau of the Census, the Civil Service Commission, the Department of Defense, the Department of Labor, the Department of Health, Education, and Welfare, the National Aeronautics and Space Administration, and the Central Intelligence Agency."

SEC. 2. (a) It shall be the duty of the Committee—

(1) to make an intensive study of the need, both governmental and nongovernmental, for a permanent, comprehensive, and continually current record of scientific and technical personnel throughout the United States which will provide appropriate information on both the formal training of such personnel and their subsequent experience;

(2) to determine the type and kind of information which such a record could most advantageously supply and should be expected to provide;

(3) to determine in what manner and through what means such a record may best be maintained; and

(4) to report its findings and recommendations to the Congress not later than two hundred and seventy calendar days from the date of the enactment of this Act.

(b) The findings and recommendations referred to in paragraph (4) of the preceding subsection shall include (but not necessarily be limited to) the following:

(1) The probable cost of any recommended program.

(2) The estimated length of time which would be required to place an effective scientific manpower tabulation program in operation.

(3) Whether the best results could be expected through compulsory or voluntary means.

(4) What agency of Government should bear responsibility for the program, and whether that responsibility should be exclusive or merely primary.

(5) What agencies of Government should be expected to cooperate with the agency responsible for the program and the manner in which such cooperation should be carried out.

(6) What amendments, if any, to laws now affecting scientific manpower tabulations or registers should be made.

SEC. 3. In carrying out the functions specified in section 2, the Committee is authorized and directed to consult with the Federal Council for Science and Technology, and to obtain the views of such private individuals and organizations as the Committee deems appropriate as well as those of Government agencies not represented on the Committee but having specific interest in the program under study.

SEC. 4. For the purpose of effectuating this Act, each agency represented on the Committee shall furnish, upon the request of the Chairman, necessary assistance to the Committee as authorized by section 214 of the Act of May 3, 1945 (59 Stat. 134; 31 U.S.C. 691). Such assistance may include the detailing of employees to the Committee to perform functions consistent with the purposes of this Act.

SEC. 5. Upon the completion of its study and the submission of its report to the Congress as provided in section 2(a)(4), the Committee shall cease to exist.

The CHAIRMAN. Now, Mr. Beresford, did you handle both of these bills as a staff member?

Mr. BERESFORD. Just the first one. Mr. Yeager handled the second one. Just H.R. 6288 for me.

The CHAIRMAN. What witnesses do we have on the Anfuso bill?

Mr. BERESFORD. Dr. Bronk, president of the National Academy of Sciences; Dr. Waterman, Director of the National Science Foundation; Mr. Richard Horner, who is not here yet, the Associate Administrator of the NASA; and Mr. Robbins, of the National Society of Professional Engineers.

I also have a telegram from James Van Allen commenting on the bill.

The CHAIRMAN. All right, we will take up the Anfuso bill first, then. Would you read the telegram from Dr. James Van Allen (State University of Iowa)?

Mr. BERESFORD. Yes, sir.

Regret inability to be present for hearings on H.R. 6288, but wish to transmit following remarks:

1. I heartily support the basic intent of H.R. 6288 in stimulating and encouraging outstanding work in science and in raising the prestige of science as a career, thereby attracting more able young persons.

2. I respectfully suggest that primary consideration be given to creative achievement in fundamental science, including the physical and biological sciences and mathematics, and that much less consideration be given to achievements of an administrative or engineering nature. This suggestion is founded on the belief that the former type of activity is much less encouraged and rewarded in the United States than the latter, and indeed, many tendencies are at work to syphon off able persons from fundamental scientific endeavors, which is the greatest national weakness in the present era. The most important function of H.R. 6288 should be to create a countertendency.

3. In view of the foregoing suggestion, I would further suggest that the National Academy of Sciences be designated as the primary, though not the exclusive nominating agency, since it represents better than any other organized body in the United States the spirit and scope of fundamental science.

4. Finally, I feel that the provision of section 5 might well be the subject of a special congressional award, but that section 5 is an incongruous addition to the basic intent of the subject bill, since it refers to an individual act of heroism, having little relationship to a productive career of a professional scientist.

Respectfully submitted.

JAMES A. VAN ALLEN,
State University of Iowa.

The CHAIRMAN. Fine. That is a fine telegram.

Now, Mr. Beresford, do you have the report of the Department on this bill? I think it would be proper to read that report first. It is a little lengthy. But I think, to put the bill in proper perspective before the committee, would be very helpful.

Mr. BERESFORD. I will have to get that.

The CHAIRMAN. Will it take some time?

Mr. BERESFORD. No, just a moment.

The CHAIRMAN. May I say to the members of the committee, while we are waiting, that Mr. Anfuso submitted this bill and we submitted it to the Department for report. The Department has recommended a number of changes in the bill. Mr. Anfuso is aware of the changes, and Mr. Anfuso is flexible in reference to changes.

In the meantime, we have Dr. Waterman here this morning of the National Science Foundation, and we have the opportunity to get their ideas of changes and proposals at the same time.

Now, Mr. Beresford, you have the report. Would you mind having a seat there, because it is a little lengthy, and I want everybody on the committee to hear that report.

Mr. BERESFORD. Shall I read first the one from the NASA?

The CHAIRMAN. Whichever one you care to.

Mr. BERESFORD. Well, that will be in reverse chronological order. It will be in the order in which they are filed. This one is signed by T. Keith Glennan, Administrator of the NASA.

I refer to your letter dated April 15, 1959, in which you request the views of this Administration with respect to H.R. 6288. This bill may be considered as consisting of two parts. First, the proposed legislation would establish a National Order of Science to provide recognition for U.S. citizens or qualified applicants for naturalization who make outstanding contributions to the security of the United States or the progress of mankind in science and engineering, the term "science" being limited to the physical sciences and mathematics.

Such individuals, not more than 20 each year, would be nominated by the President, and if approved by the Committee on Science and Astronautics of the House of Representatives and the Committee on Aeronautical and Space Sciences of the Senate, then appointed by the President to the Order. Appointees would be given a gold medal, to be known as the National Medal of Science, and a tax-free payment not to exceed $10,000 as the Presdent may prescribe.

Second, the proposed legislation would also provide a special award of $100,000, taxfree, to the first living human being who travels in space at orbital velocity. This special award would be shared if two or more individuals qualified for it, and would be granted to the next of kin if the awardee were to qualify but die before receiving payment.

This award is to be conferred by the President pursuant to a determination by the Administrator of NASA of the person or persons entitled to it. On behalf of NASA, I may say that the basic objectives of the first part of the proposed legislation are of considerable interest. NASA favors governmental actions of various types to encourage excellence in science and engineering. Indirectly, NASA should benefit from such governmental acknowledgement

of the actions of individuals who perform noteworthy services of outstanding significance to national security or to the progress of mankind.

It is my personal view, therefore, that the establishment of honorary recognition of the type proposed would be desirable. It seems to me, however, that it should include a broader area of achievement than the areas comprehended by only the physical sciences, mathematics, and engineering. In this connection, proposed legislation prepared by the President's Committee on Civilian National Honors and forwarded to the Congress on January 21, 1959, seems particularly appropriate. That proposal is broad enough to cover a range of activities which would comprehend any achievements which could be regarded as "especially meritorious contributions to the public interest."

With regard to the special award for the first space flight at orbital velocity, NASA opposes this proposal. In our view it is incompatible with the undertaking of this Administration to train the astronauts and carry out Project Mercury. There is no necessity in terms of the advancement of the project to create incentives such as this special award. Hence, the interests of the Nation do not require it.

In addition, the training of the astronauts may be adversely affected by legislation of the type proposed. The project for manned space flight involves not only reliance upon a blending of many different physical sciences, but also upon a finely balanced psychology. In our opinion, focusing attention by way of legislative action or public debate upon a special award at this time may harmfully emphasize the commercial or personal profit aspect of the work of the astronauts, without benefiting the national effort to accomplish manned flight in space. This we deem undesirable.

Finally, in our view the proposed special award seems discriminatory. We see no difference between the first manned flight in space and the second or third, or possibly later flights which are contemplated in Project Mercury. It follows from the foregoing that the space award is not necessary and may be harmful.

Summarily, with respect to H.R. 6288, it is our view that the general encouragement to be derived from such governmental arrangements as the National Order of Science are desirable, but that special awards such as the one proposed for the first astronaut should not be considered.

Sincerely yours,

T. KEITH GLENNAN, *Administrator.*

Mr. ANFUSO. Mr. Chairman, at this point I should like to state for the record that I agree with the reasoning of Dr. Glennan, and I am perfectly willing to strike out section 5 of H.R. 6288, and at the proper time offer an amendment.

The CHAIRMAN. Let me suggest to the gentleman, before he agrees too quickly, we hear what the witnesses have to say, because they may come up with other ideas.

Mr. ANFUSO. Well, I was going to say——

The CHAIRMAN. I know the gentleman is very responsive to reason in this matter.

Mr. ANFUSO. I just wanted to add this to that, Mr. Chairman: The witnesses here may testify as to some form of insurance which may be substituted for section 5.

Mr. MOELLER. Will the gentleman yield for a question?

Is there a type of insurance available for these people? Surely insurance companies wouldn't be interested. Does anyone know?

The CHAIRMAN. Well, let's ask the witnesses when they come up.

Now, the other report, let's get that, and then we want to hear Dr. Waterman.

Mr. BERESFORD. The following is from Dr. Waterman, Director of the National Science Foundation:

This is in reply to your recent request for comments of the National Science Foundation on H.R. 6288, etc. The National Science Foundation is in accord with the objective of recognizing persons who have distinguished themselves through outstanding achievements in various fields. As a general matter, how-

ever, we believe that such recognition should be given for distinguished achievement in a broader number of fields than science and engineering. Science is but one element of our culture, and a vigorous culture can result only if support is provided for all of its intellectual activities. Thank you for giving us the opportunity to comment on the bill.

The Bureau of the Budget has advised us it has no objection to the submission of this report.

Sincerely yours,

ALAN T. WATERMAN, *Director.*

The CHAIRMAN. That Bureau of the Budget reference was to the report of the National Science Foundation?

Mr. BERESFORD. Yes.

The last is from the Department of Agriculture, Agricultural Research Service:

In reviewing the provisions of H.R. 6288, a bill to establish a National Order of Science, etc., which you introduced on April 13, we were surprised to find an unusually restrictive definition for the term "science." Without in any way detracting from the importance of the physical sciences and mathematics, it would seem appropriate to recognize also the important contributions made in other scientific fields, such as those involving economics, biology, medicine, and agriculture.

It seems important to maintain effective correlation of effort in the physical sciences, live sciences, and social sciences. Although the Department of Agriculture has not been requested to comment on the bill, the above comments are made for your consideration in relation to section 3 of H.R. 6288.

Sincerely yours,

M. R. CLARKSON,
Acting Administrator.

The CHAIRMAN. Fine.

Now, Dr. Waterman, we are happy to have you here this morning. Do you have a prepared statement, Doctor?

Dr. WATERMAN. Yes, sir, I have a very brief one, which goes further than that letter.

The CHAIRMAN. Do you have copies of that statement?

Dr. WATERMAN. A few.

The CHAIRMAN. Well, give one to the reporter, and if there are any additional copies you may give them to members of the committee.

I want to hear Dr. Waterman, myself, and I am sure his presentation will be informative.

STATEMENT OF DR. ALAN T. WATERMAN, DIRECTOR, ACCOMPANIED BY CHARLES B. RUTTENBERG, ASSISTANT COUNSEL, NATIONAL SCIENCE FOUNDATION

Dr. WATERMAN. It is a pleasure to appear before you this morning to comment on H.R. 6288 which would establish a National Order of Science to provide recognition for individuals who make outstanding contributions in science and engineering.

Speaking generally, the subject of incentives for performance in a profession or field of activity is, of course, one of considerable importance. This is especially true in a field and in a profession so important at the present time to the strength and security of the country as science. As incentives, awards or prizes for the purpose are always devices seriously to be considered.

In my experience, decision as to the desirability and suitability of such an award should be considered with reference to the particular field in question and to the degree to which it can be determined to be indeed a significant but healthy stimulus.

In the present bill, which proposes to award prizes for excellence and accomplishment in science, particularly physical sciences and mathematics, therefore, one's first thought is to try to gage the degree of attention and prestige which such prizes would have, first of all, upon the scientific community. While I have not canvassed this situation, I believe it would be found that the majority of scientists, like most professionals, regard most highly an honor or citation which is established under the auspices of some organization concerned with their own particular field of science for this particular purpose. Thus, there are a number of prizes, medals, and awards which have been set up in the hands of scientific societies, associations, and occasionally by industry, which are usually awarded only to members of a particular discipline of science, such as physics, chemistry, biology, or indeed in more narrowly defined fields. The most notable cases are, of course, the Nobel prizes and recently the Atoms for Peace Award in the field of nuclear science and its peaceful application.

Aside from awards for Government service, which include military service, one example of a present Federal award in the field of science is the Enrico Fermi Award for scientific contribution to the field of atomic energy. Even this, you will note, is specific in its application to a special scientific field rather than an award for outstanding work in science.

I suppose in the present case this general type of subdivision could be made.

If the Federal Government were to set up prizes and awards in the fields of science, it is my opinion that this would provide a type of honor which the scientists would, of course, appreciate fully as a national honor, but which would not provide the same incentive to them as awards provided by their own societies and organizations in their individual disciplines. After all, the highest award, generally speaking, to a specialist is the respect and approbation of his colleagues whether expressed in tangible form or not.

There is, of course, another side to this matter—that is the effect upon the public at large. This might well be an important consideration, especially among the younger generation. However, it would appear to me that this advantage might be offset by the seemingly overemphasis on the part of the Federal Government on science.

In other words, if the Federal Government were to set up a national award, would it not be more desirable to provide, say, for a number of awards in various fields of activity so as to cover not only science but excellence in achievement along major lines important in the national interest. Since the bill limits the awards to the physical sciences and mathematics, this constitutes even more of a restriction on fields for recognition. In a plan to give science awards, it would seem surely to be in order to extend the coverage to the life sciences.

Development of respect for intellectual achievement in the United States is an important goal and one which cannot be fully attained by providing recognition in the field of science alone. Whether or not general awards on a national level for excellence in achievement would substantially aid in accomplishing this objective is not entirely clear, although many believe that such awards would place needed emphasis on the intellectual and cultural attainment of our Nation. In any event, should it be determined that such a plan be undertaken the selection process would have to be carefully considered so as to avoid

the possibility of extraneous considerations entering into the selection process.

I find myself in considerable sympathy and agreement with Dr. Van Allen's report, where he says here is an opportunity to stress the pure science side which is apt to be neglected and not fully understood. If this were done, it would make the selection of the awards considerably clearer because when one attempts to compare achievement in pure science with practical applications of science, the choice is sometimes extremely difficult, and the latter is apt to be recognized in many other ways than awards.

Further, I would agree with the report of Dr. Glennan in regard to section 5. It seems to me that that doesn't really belong with the rest, and there are plenty of incentives for that without the need for a financial award.

I have appreciated the opportunity to present my views on this subject and will be very happy to answer any questions you may have.

The CHAIRMAN. Thank you very much, Doctor. I understand from your brief report that you do not favor section 5?

Dr. WATERMAN. That is correct.

The CHAIRMAN. As to the rest of it, you feel that private incentive from societies is very acceptable and very much appreciated by the individuals who receive the society awards, but that doesn't quite present your ideas in reference to a public incentive; that is, an incentive from the U.S. Government. If you had it, however, I think you said that you would wish to limit it to, or certainly to emphasize, which is it, the pure sciences?

Dr. WATERMAN. Yes; I think that would be the best way to do it, because the practical achievement is recognized in other ways, and here would be an opportunity to provide incentive for the basic or pure research side.

The CHAIRMAN. As against the applied research side?

Dr. WATERMAN. Yes.

The CHAIRMAN. Now, you said something about the life sciences, too. What do you mean by that?

Dr. WATERMAN. Simply that this bill calls for awards in the physical sciences and mathematics, and it seems to me it ought to be broadened to include the life sciences.

The CHAIRMAN. What do you mean by life sciences; biological sciences?

Dr. WATERMAN. Yes, sir.

The CHAIRMAN. And would you include any other fields of science?

Dr. WATERMAN. This might go further and include the social sciences, but that is more difficult. I think, to be clearcut in the definition of the fields where the award is to be made, the best plan would be to have it for the physical, biological, mathematical sciences.

The CHAIRMAN. You would include engineers in there?

Dr. WATERMAN. I would; yes.

The CHAIRMAN. Now I will ask you this: If the committee reported a bill with the changes in section 5 stricken out, would you favor under those circumstances as many as 20 awards a year, or would you feel like that was really too many and it should be reduced to, say, 10 or perhaps less?

Dr. WATERMAN. I have not given the number very much thought, Mr. Chairman. I think the guiding principle should be to make the awards in specific disciplines or fields of science, and that the total number ought to be governed pretty much by that. In other words, it is difficult to make a selection in science across the board which includes all science, because it is hard to compare creditable work, distinguished work, in biology, with respect to the field of, say, physics, so the number of awards would be determined pretty much by the number of disciplines.

The CHAIRMAN. If you have too many awards it tends to cheapen the award. There is only one Nobel prize. Now, if you have too many awards of a certain character it may tend to cheapen it?

Dr. WATERMAN. The Nobel prizes do divide up among disciplines, they have one for biology and medicine, physics and mathematics, and so on.

The CHAIRMAN. Then would you say that the incentive, $10,000, was a proper amount to be set, not to exceed $10,000?

Dr. WATERMAN. On the stipend, I think the honor is more important than the stipend, except for one thing, and that is if the stipend is sufficient to give the scientist opportunities to purchase equipment and in general do more research than he could do with his ordinary income, that is a great help to him.

I believe the chief incentive is the award itself, and the stipend should be sufficient to enable him to do things he otherwise would not be able to do in his science, and the really distinguished awards that are now given are higher than $10,000. The Nobel prizes were originally intended to be $50,000. Now they are lower.

The CHAIRMAN. I would fully agree with you that the prize itself ought to be the thing. The stipend should be incidental; but, frankly, I shouldn't be asking these questions, because my colleague, Mr. Anfuso, introduced the bill, and so I am going to recognize Mr. Anfuso to develop his bill and then recognize the other members of the committee.

Mr. ANFUSO. Mr. Chairman, I certainly welcome the questions that you asked. I think they are very pertinent to the issue.

The CHAIRMAN. Well, I think you ought to be allowed to cover your own bill.

Mr. ANFUSO. Thank you. Dr. Waterman, section 2(b) of the bill provides that not more than 20 individuals may be nominated for appointment to the order in any one calendar year. That would mean——

Dr. WATERMAN. That would take care of it.

Mr. ANFUSO. That means you can have five. Dr. Waterman, the report of the President's Special Committee on Civilian National Honors, dated March 29, 1957, recommended a medal for special meritorious civilian achievement. You recall that, don't you?

Dr. WATERMAN. Yes, sir.

Mr. ANFUSO. Under that legislation that would cover, the fields of achievement included were not limited but they specified perhaps public affairs, social and spiritual betterment, education, letters and arts, law, labor, industry and related fields, as well as natural sciences and engineering. Would you favor such broad criteria for the awards

under the present bill, or would you limit it, as you have already testified, to sciences and add to what the bill provides, biological sciences?

Dr. WATERMAN. Well, what I intended to bring out in my testimony was if the award is an award in the sciences, it should include the life sciences, go further than the physical sciences and mathematics.

Mr. ANFUSO. That would be the addition of biology?

Dr. WATERMAN. That is the way I would state it. As I stated in the letter which you heard, and in general testimony, it would be my feeling that the important thing here is the incentives to the country of a high order of achievement in intellectual work, and my personal opinion would be that I would favor the broader coverage such as recommended by the President's committee rather than confining it to sciences alone.

It might be more easily handled with respect to sciences, but the other is important.

Mr. ANFUSO. In other words, if the bill could be amended to include the broad scope as specified by the President, you would welcome that, too. Is that right?

Dr. WATERMAN. That seems to me to be the best way to do it; yes.

Mr. ANFUSO. And the other way, if we are going to limit it to sciences, would be to add biological to what the bill already provides. Is that correct?

Dr. WATERMAN. Yes, sir.

Mr. ANFUSO. Of course, you have heard, I am sure, time and time again, many people saying that natural sciences and mathematics have been somewhat underemphasized in this country. Isn't that correct?

Dr. WATERMAN. Yes. One has to be a little careful how one interprets that. In training and education, they have been underemphasized, or rather they have been somewhat neglected, probably because of the great importance of the technological side of science, and this has meant that people have gone into the research and development side of science, rather than into the elementary teaching, and this has drained the field of good teachers.

Then, too, scientific equipment in laboratories is an additional expense which other subjects don't have, and that has been harder to provide.

Mr. ANFUSO. Dr. Waterman, when you last testified here, your colleague, I believe, was the chairman of the special board. What was his name, again? Who testified?

Dr. WATERMAN. Which hearing was this?

Mr. ANFUSO. Last week.

Dr. WATERMAN. That is Dr. Gross, who is Vice Chairman of the National Science Board.

Mr. ANFUSO. I think that both of you at that time emphasized that. As a matter of fact, the members of that Board did not receive any salary. They did it out of patriotic reasons, and so forth. I certainly admire your patriotic interests and the patriotic interests of all of these scientists, but I do believe that while you are not asking, I believe that these scientists would appreciate some recognition on the part of the American people, for their efforts. Isn't that correct?

Dr. WATERMAN. I expect so. Dr. Bronk is the Chairman of our Board, by the way.

Mr. ANFUSO. He is the Chairman of the Board?

Dr. WATERMAN. Yes; Dr. Bronk, who is here today. Dr. Gross is Vice Chairman.

Mr. ANFUSO. In other words, you prefer that such a thing come from us. You are not making the suggestion, and this is the way this bill comes about. We are making the suggestion. I believe that the American people would want to do something of this kind, and that is the reason I proposed the bill.

What body, in your opinion, Dr. Waterman, should make the recommendations to the President as to the recipients of the awards? The National Academy of Sciences, a special civilian achievements board, as recommended by the President's Special Committee, or what suggestions do you have?

I believe my bill provides that the recommendations come from the National Science Foundation.

Dr. WATERMAN. Well, if the recommendations came from the National Science Foundation, we would turn at once to the most distinguished bodies to give us advice, and the first one we would turn to would be the National Academy of Sciences. If it were our responsibility to submit the recommendations, we would check in ways that seemed appropriate in connection with whatever the field was. I think it would be very appropriate, though, especially if this is in the field of pure sciences, to have the recommendations come from the National Academy of Sciences to the Government.

Mr. ANFUSO. In other words, would you amend, then, (b), on page 2, where we say "on the basis of recommendations submitted by the National Science Foundation"? Would you amend that or would you leave it as it is?

Dr. WATERMAN. I would have really no feeling on that, Mr. Anfuso. If we did it, we would depend heavily upon the recommendations. We would call on the National Academy of Sciences and we might consult other Government agencies and the National Academy of Sciences as well, but we would depend primarily on the Academy.

Mr. ANFUSO. I am satisfied that you would do that. I don't believe I have any further questions on the bill, Mr. Chairman.

The CHAIRMAN. Mr. Teague.

Mr. TEAGUE. No questions, Mr. Chairman.

The CHAIRMAN. Mr. Sisk.

Mr. SISK. I would like to ask Dr. Waterman if he has any comment on the suggestions by the gentleman from New York, Mr. Anfuso, regarding this section 5. As I understand it, you recommend that this be stricken, and I believe the author of the bill indicates that he agrees with this at the present time.

You mention this idea of insurance. I am just thinking out loud, Dr. Waterman, and I toss this out to you: If the first astronaut gets into orbit, but because of malfunction of the vehicle, we lose the vehicle and the man doesn't get back, he will be covered by his military insurance of $10,000. Of course, all of these boys have wives, and most of them children. Do you have any recommendation as to a similar act that might take care of these men who perform above and beyond the normal call of duty?

Dr. WATERMAN. This would seem to be very much in order. I recall that during the war the Office of Scientific Research and Develop-

ment, where I served, established a form of extrahazardous insurance for cases where people went into extremely hazardous situations. It would seem in order to establish something like that for an obviously extrahazardous adventure such as this.

Mr. SISK. Well, would you favor the working out of such an amendment to this particular bill or do you think it should be done entirely separate to a bill in which we are attempting to recognize achievements in science itself?

Dr. WATERMAN. I have given this matter no particular thought. As was stated, I understand from Dr. Van Allen and Dr. Glennan that this did not seem to be an appropriate part of the present bill since it was a very special case and it was really for heroism and achievement as well, so it didn't quite conform to the spirit of the bill. But if this is the best place to put insurance in, I would say it would be in order to do so. In any event, this would be an important thing to do.

Mr. SISK. I am inclined to agree with you on that statement. However, I do think that Mr. Anfuso brought up an interesting subject for some thought in the idea that in this whole space research there are going to be from time to time in the initial phases some real hazardous expeditions to be made by human beings. I am wondering if, maybe, before that occurs, it might be well to make some type of preparation to take care of the families that are left in case of death?

I have a feeling that the Congress probably would by way of a special private bill take care of it later, but I was just interested in your reactions to that thought.

The CHAIRMAN. Would the gentleman yield at that point?

Mr. SISK. I would be glad to.

The CHAIRMAN. It occurs to me, and I would like to have the doctor's idea, that the astronauts who follow the first one going into space are going to need protection more than the first one. The first one who returns is going to reap a tremendous harvest out of being the first man that ever went into space, whereas those that follow may have almost the same hazard but will not reap the same returns when they come back. It seems to me that you are on the right track, that it should be general to extrahazardous situations.

Dr. WATERMAN. Yes; it seems to me general coverage is what is needed, because anyone who does this should be entitled to these benefits.

Mr. SISK. I agree with that thought. And the thought that I have would not concentrate on the one man only, but the fact that for some period of time there are going to be a number of individuals involved in a very hazardous situation.

I thank you, Mr. Chairman. That is all I have.

The CHAIRMAN. Mr. Quigley.

Mr. QUIGLEY. Mr. Chairman, I would merely like to make this observation. I thoroughly agree with you that the first astronaut who does it successfully is going to make "Lucky Lindy" look like nothing. I think the reception the country and the world and the Congress will give him will be unbelievable, and I think that those who come after might be cast in the shadow. But it seems to me that our colleague from California not only has a point, but I would direct your attention to the thought of the fellows who go before. I have a feeling that

there have already been, and will be in the future, before we put anybody into space, many an unsung hero who will have assumed many hazardous duties known only by the people who are actually involved. One or two persons will come out of this man-in-space program as great big heroes. But behind them and before them there will be many who will have made equally great sacrifices and assumed equally great risks without the publicity, the notoriety, and the monetary rewards. I would think that this would be a factor not only for those who come after the astronaut but those who will come before him.

The CHAIRMAN. I agree with the gentleman.

Mr. Wolf.

Mr. WOLF. I have no questions.

The CHAIRMAN. Mr. Karth.

Mr. KARTH. Mr. Chairman, I think that this bill is deserving of a great deal of merit, and I will certainly support Mr. Anfuso and the committee in doing something about it.

The CHAIRMAN. Mr. Hechler.

Mr. HECHLER. Dr. Waterman, I would like to draw you out a little bit on the earlier portion of the science on the National Medal of Science and National Order of Science, with particular relation to the suggestions in Dr. Van Allen's telegram. It seems to me that what we are really aiming at here are not what Dr. Van Allen calls achievements of an administrative or engineering nature but rather what we are trying to encourage are the basic creative achievements, and I am sure that the author of the bill had those in mind, too. I wonder if, in the hearings and the report, and perhaps even in the bill itself, we could express the intent of the committee a little more clearly on that? I would like to get your reaction on that point.

Dr. WATERMAN. I share those views, as I implied a few minutes ago. It seemed to me that Dr. Van Allen put this rather well, that those who achieve practical results get rewards in one form or another, but the people who are in the forefront of the theoretical work and in the progress of science at the very frontier frequently do work out of which one can see no immediate application but without which the application is impossible, and it is that type of intellectual achievement that appeals to me as being very much worth encouraging.

Mr. HECHLER. I don't suppose it really makes any difference, as Dr. Van Allen implies in his telegram here, which agency makes the recommendation or selection. He seemed to imply that if this were given to the National Academy of Sciences, that it might represent more fundamental scientific endeavor to the country. I don't know whether you would care to comment on that or not.

Dr. WATERMAN. Well, as you know, the National Science Foundation has as its major mission the encouragement and development of basic research in education and the sciences, so we stand for much the same thing. The only difference is that we are, frankly, a Government agency, and the National Academy would perhaps, in the public mind, be regarded as more representing science throughout the country than a Federal agency, but I wouldn't have any particular opinion on that.

Mr. HECHLER. Well, this is not nearly as important as underscoring the creative achievements of a basic nature.

Dr. WATERMAN. Yes.

Mr. HECHLER. And if that could be done in either the bill or——

Mr. ANFUSO. Will the gentleman yield? I believe that we could put additional clarification into section 2(a), but even if we did not make such clarification, Dr. Waterman, in considering the awards or rather in making the recommendations which would be left to the National Science Foundation, you would certainly take into consideration the men that my colleagues spoke about, would you not, because I think the language is broad enough, the living individual who, in their judgment is deserving of special recognition because of their outstanding achievements in engineering, science, mathematics, or biological science. Would you want such additional language?

Dr. WATERMAN. I believe it would clarify the bill to have it there, yes.

Mr. HECHLER. Would the gentleman yield at this point?

Mr. ANFUSO. Yes.

Mr. HECHLER. I believe this is important not only for the guidance of the agency making the recommendations, but also for the country to know what we are honoring here. I had full faith that the National Science Foundation would come up with the best answers; yet I think it is important that the country understands what we are trying to honor.

Dr. WATERMAN. Well, in that sense may I add one further comment. The National Academy of Sciences is an old organization and it is well understood that it stands for science, whereas the National Science Foundation is much younger, and like a good many agencies it can stand for a number of things in Government. So if you want this for pure science, it should be the National Academy of Science for the best understanding on the part of the people of the country.

Mr. ANFUSO. Will the gentleman yield again?

May I address this question to Mr. Beresford: Do you think that we can make that change in section 2?

Mr. BERESFORD. Oh, yes.

Mr. ANFUSO. I believe you are now saying, Dr. Waterman, that the National Science Foundation should be changed to National Academy of Sciences?

Dr. WATERMAN. I have no particular feeling about it. If we were in the bill, we would call on the National Academy, but in response to Mr. Hechler's question, what would be better understood by the country in connection with the development of intellectual achievement, I believe that the National Academy, being an older organization, and standing very firmly for that sort of thing, would be better understood.

Mr. ANFUSO. Can we say this: On the basis of recommendations submitted by the National Science Foundation or the National Academy of Sciences?

Dr. WATERMAN. That would be all right with me.

Mr. ANFUSO. Thank you.

The CHAIRMAN. Any further questions?

Mr. Daddario.

Mr. DADDARIO. Dr. Waterman, in support of this bill, one of the basic reasons, as I understand it, that you gave was that it would be a needed recognition for intellectual accomplishment. Is that correct?

Dr. WATERMAN. Yes, sir.

Mr. DADDARIO. Then you also touched on the fact that you believe this ought to go through the broad attainments in all fields, and you mentioned the social sciences as well. Now don't you believe that if we are to set a standard, and if for the first time the Government is going to grant awards of this type, that it should include as well this field, as difficult as it may be to narrow it down?

Dr. WATERMAN. There would be advantages in that. As I say, I believe I would prefer the coverage in all of these fields beyond science, if one, indeed, is trying to get at this development of intellectual initiative and achievement. One way to do it is to start with science, but a more direct approach would be to develop it in all sciences and all other fields, such as art and music, and the others, such as recommended by the President's committee.

Mr. DADDARIO. You have said that this would be a good start, but do you believe that it might be a better start to recognize that from the beginning and to include it within the original bill?

Dr. WATERMAN. Yes, that would be best.

Mr. DADDARIO. Thank you.

The CHAIRMAN. Mr. Moeller.

Mr. MOELLER. Dr. Waterman, did I understand you to say that you thought possibly just the merit involved would be sufficient, that maybe the stipend wouldn't be such a major part of this? Is that correct?

Dr. WATERMAN. Well, I think to a recipient of the caliber we are talking about, the stipend is secondary to the award, except for one thing, and that is if the stipend enables him to carry on his own work his research, to a higher degree, then it becomes important to him, and in that case assume greater than $10,000——

Mr. MOELLER. Do you know of any other nation besides Russia that gives stipends for this, aside from the few that we give?

Dr. WATERMAN. Yes, I am sure this happens.

Mr. MOELLER. It is not uncommon?

Dr. WATERMAN. No. Of course, the Nobel prize is one illustration.

Mr. MOELLER. I think we read sometime earlier in the year that a schoolteacher may earn as much as $40,000 a year in American money primarily through these extra awards, financial awards, and so forth. This must certainly be to those people an incentive to, first of all, stay in the field of education, and, second, to excel more and more. This is a good thing, and it stimulates young people not yet in the field and gets them going in that general direction.

Dr. WATERMAN. Yes. After all, when it comes right down to it, one of the incentives would be to raise the salaries in that profession, which is what Russia is doing, and then the top people get very high rewards.

Mr. MOELLER. That would be something the Government could hardly regulate.

Dr. WATERMAN. Yes. A well-known illustration is the one known for many years of what can we do about secondary schoolteachers' salaries. If you want good secondary schoolteachers, anyone will say at once, raise their salaries. But how can we do it is a problem. The best incentive is to raise the salaries of the profession.

Mr. MOELLER. I am not sure, Mr. Chairman, but what section 5 should stay in here and be reworded in some way. I think it ties in

very well with this bill, and I think the incentive is here. I think it is time that the U.S. Government does something about this.

The CHAIRMAN. Any further questions?

Mr. King.

Mr. KING. Dr. Waterman, I would like you to discuss a certain aspect of this that I think has not been discussed, and let me say first of all to my distinguished colleague from New York that I certainly am in full sympathy with the objectives of the bill and I shall support it after the amendments we have been discussing are taken care of. But I would still like this aspect of it to be discussed.

I have down here five simple propositions that lead to a possible conclusion. Let me give them to you.

First, the purpose of this bill is to stimulate science, stimulate scientific activity. I assume that is its purpose, rather than philanthropic or altruistic motives. We are trying to stimulate science.

Proposition 2: The 20 people who receive this award, 20 or less, will presumably be our top scientists. Presumably they will be men or women who have been in the field for a long time, and are well-established, dedicated souls who have put many tedious hours, weeks, and years into their professions.

Third, these top people are not the ones who really need the stimulation. By the time they reach their position of preeminence in the field I assume they have a dedication about them that constitutes their own stimulation. I doubt if they need further stimulation.

Proposition 4: Where we really need the stimulation is on the bottom level. I am thinking of the tens of thousands, perhaps hundreds of thousands, of teenagers and those in their early twenties and middle twenties who have tremendous possibilities in a scientific career lying ahead of them, but who are making the difficult choice as to whether they shall go into a scientific career or whether they shall go into something perhaps more lucrative.

Proposition No. 5: I am wondering whether the stimulation offered by these 20 awards to the top 20 men is sufficient stimulation to reach down and touch the tens of thousands or hundreds of thousands on the bottom level, where the stimulation is really needed.

Now, I remember Dr. Teller, in his article of a week or 2 ago, stated flatly, categorically, that in 10 years the Russians would be ahead of us in science. Then he said there is nothing we can do about it, even if we tripled or quadrupled our budget for scientific education today. There is nothing we can do about it because they have such a tremendous amount of momentum, that because of the inevitable lag that is involved in this situation they will overtake us in, I think he said, 10 years, and we are powerless to do anything about it at this late date.

That emphasizes to me the tremendous importance of providing stimulation on the bottom level, rather than the top level. So now if my five propositions are correct I raise this question: Might there not be wisdom in taking some of these medals and some of the money and breaking them up, maybe, instead of talking about 20, talk about a thousand, and giving them to many adolescents and teenagers and those in their early twenties, on the bottom level, and see if we can't get the healthy stimulation that we need there to insure that 10, 15, and 20 years from now we will have a very healthy harvest of top-notch scientists?

Now, could you discuss that aspect of it for a minute?

Dr. WATERMAN. Surely. That sounds like Dr. Teller's remarks.

Mr. KING. Yes; his remarks were the ones on the fact that the Russians would overtake us in 10 years.

Dr. WATERMAN. Yes; I am quite familiar with them. I agree with Dr. Teller, in that this is an extremely serious situation. I would disagree with him in this respect: If we made up our minds to excel and were determined to do it, we could do it. The difficulty is that we seem to be so slow in getting some of these things started, such as you mentioned, the incentive to younger groups. Of all the careers that need incentives, in my opinion, the most important one is to go into teaching, especially in secondary schools, because that is where the scientists begin to be trained. That is where their interest can be excited. That is where their ability can be recognized, and it is the first teachers that deal with these young people who are very critical in the whole scheme. I mean critical in the sense that they are key people.

Our problem is how can we properly give incentives to that area to get the whole thing underway. I believe we will have plenty of youngsters interested in science, because of the extremely interesting and important things happening, but we have got to catch them, find who are able, and give them every encouragement and the best possible training.

Now, if we really were determined to do that, I think we would surpass the Russians. The difficulty is we seem to be very slow in getting at it. That is just one side of your question.

Now, on this particular award, it wouldn't necessarily follow—I think Dr. Bronk would agree with me on this—that if the award were set up it would be to established scientists. Some of the most brilliant work in a field as active as science comes from young people in the ages between 20 and 30, and those would undoubtedly be recognized and recognized quickly by a scheme like this, in the ordinary course of events.

For example, in the field of physics you recall Dr. Lee and Dr. Channing shared a Nobel prize award. Well, they are only about 30 years old, or a little less. So this kind of award doesn't necessarily go to the established people. It would only go to them on the basis of either a very impressive discovery that they have made, speaking generally, or a very distinguished career indeed, because this award would take into account the particular things that they did, as well as their standing at the time in other ways than just the progress of their research. There is that side to it.

I agree fully when you say stimulation is needed in the lower ranks, and this gets back to the question of how far a prize can serve as an incentive. I don't regard myself as an authority on the public-relations aspect of this, but usually it is expected, if there is a national prize which therefore attracts attention all over, that it isn't so much for the benefit of the people who receive it as it is the reception of the country, and the realization on the part of everyone in the country that this is an important field which is being recognized by the Government. I think that would be the theory.

So anything of this sort would, to a certain degree, which I am rather unable to gage, stimulate interest in the profession on the part of the younger people, in that the Government recognizes this as very important.

Mr. KING. You mean stimulation of the top level would have a definite influence on one of the lower levels?

Dr. WATERMAN. It is an indication that the Government recognizes this as important, and that the possibility exists that if they do extremely well they may win the award. Now, many a young scientist, when he starts in, has an idea in his mind that some day he might come to the top of his profession and get a Nobel Prize, or something like that. People differ very much, and I don't know how to generalize, but you find this view very often, so a prize does have, to a certain degree, an effect on the lower ranks in the sciences.

Mr. KING. Let me ask this question: Can you see any practicable way in which the Government could give recognition to those on the lower level? Now, I realize, of course, that we have quite a system of scholarships and fellowships already established, and maybe that is enough. I am just thinking out loud. I don't have any fixed opinions; I am just exploring. Maybe our scholarships and fellowships are sufficient incentive in and of themselves, but I am just raising the question, Is there a possibility that the Government might find it fruitful to enter into this field on one of the lower levels, and by giving, shall we say, a junior award of some sort, perhaps give extra stimulation to a thousand budding scientists in their early twenties that might give them the encouragement they need to stay in science?

Does that have possibilities, too?

Dr. WATERMAN. Oh, yes; and that is happening right now with our fellowship programs in science. This is a very helpful way of stimulating a field. The reason why it is very important and very stimulating is it has two aspects. One is a recognition that they have shown ability, but even more important is the promise of further training under very free conditions. It is, in a sense, a recognition of their ability and, in a more important sense, an opportunity to them to develop their training to the fullest under the conditions which they believe most desirable for them.

That is a very powerful incentive: fellowship programs—a number of agencies have them—we have, as you know, a variety of fellowships in the National Science Foundation. The Academy has others. Many industrial firms have fellowship programs, some foundations do, and NIH has a large number. This is a very healthy stimulus, indeed.

After all, speaking as a scientist, I think the most important incentive to a young scientist is the opportunity to get on with the work that he wants to do, an opportunity to work with the people that he respects as leaders in their field, an opportunity to have the equipment that he needs, and the right kind of guidance. If he is going to be a scientist, he wants an opportunity to do research, and so this gets back into the general subject. To me, it is the most important of all, the support of basic research among competent people throughout the country.

If we can do this fully and provide support to the good scientists of the country on significant problems, see that they have the materials, the equipment, the personal assistance that they need, and see that students are trained under this program, that is the most powerful thing we can do by way of incentives—the opportunity to work.

Now, beyond that, you want opportunity to rise in the profession, of course, and that means the proper openings.

Mr. KING. Just to wind this up—and I don't want to belabor it too much—and I appreciate your comments; do you think that adequate incentives are now being given to those in their late teens or early twenties, or do you think that in addition to all of the scholarships and fellowships now made available, that the Government could still step in and add some extra incentive or extra bonuses by way of cash emoluments or medals, or other incentives that are not now in the picture?

Dr. WATERMAN. I am trying to think of the possibilities here. Referring to my previous remarks, I think the most important thing the Government can do is to provide opportunities for all who are really competent to get on with their career. Now, the additional incentives for particular people are at present taken care of quite nicely by these fellowships which are broadly distributed, and there are a fairly large number of them. Whether special incentives in the way of prizes are needed beyond that, I would rather doubt, at the lower levels.

I think what is needed is the prospect of a good career ahead and the prospect to get on with their work. You see, this is a little bit like—say an industrial concern in its research department; any department has this same problem in its own territory.

The question is what is the best incentive, to establish prizes for those who succeed in their work, for particular original work, or something, or good accomplishment; or is it a better incentive to make sure that their salaries are completely adequate and that they are given speedy promotion and recognition by way of promotion and salary for what they achieve, rather than prizes.

Now, I have heard this question debated very often among people very experienced, and they are quite divided. Some think that the best recognition is the opportunity to get ahead in your job, increase of salary and promotion, based on accomplishment. That is the highest incentive in our system; individual prizes have a little disadvantage, in that sometimes a person may work for the prize and not on his job. There may be a slight difference there. He may try to do sensational things in order to attract attention to get the prize, and this is not quite so good as working in line of duty and gaining recognition for that.

The CHAIRMAN. Any further questions?

Mr. Roush?

Mr. ROUSH. No questions.

The CHAIRMAN. Mr. Hall.

Mr. HALL. No questions.

The CHAIRMAN. Mr. Fulton.

Mr. FULTON. The question comes up as to what we mean by order. What is that? Is that an office? Is that an organization or a society? Is that simply a title without duties?

Under the Constitution no Congressman can have a Federal office. Does that mean that if we give these fellows this order, from there on they can't be Congressmen or Senators?

Dr. WATERMAN. I take it the order is just a title.

Mr. FULTON. There is quite a difference between a Presidential award and giving somebody an order, or putting them in an order. Now, I think we should look into that just a little bit to see what the

technical requirements are that we are speaking of. Are we really creating an office here? Are we creating a title? Are we creating a separate, distinct group? Is this creating some sort of title, contrary to the Constitution?

The CHAIRMAN. You have your counsel here, Doctor. It is a legal question, really, he is asking.

Dr. WATERMAN. Well, I think I know the answer to this, if I understand the bill correctly. When one establishes an order, this is like establishing a special group to which people, as they achieve awards, begin to belong, that is all. It is just a title, really, and not the establishment of a formal office in any sense.

Mr. FULTON. Does your counsel have a precedent of any previous order established by the Congress of the United States?

Mr. RUTTENBERG. Offhand, Mr. Fulton, I don't recall any that has been created by Congress, which doesn't mean to say there may not be. I just don't have acquaintanceship with any of them.

Mr. FULTON. You see, under the Constitution we are not allowed to give any title of nobility which causes a distinction among citizens. It sounds humorous, but it isn't. I have had two brothers-in-law who are scientists, and they are pretty hard to live with anyway without getting some sort of special order that separates us from the rest of them. I don't know whether I want them in an order or not.

The CHAIRMAN. What is the legal situation, Mr. Counsel?

Mr. RUTTENBERG. One was just mentioned to me, something which I hadn't thought of. That is the Order of the Purple Heart.

The CHAIRMAN. Yes.

Mr. MILLER. The Order of the Cincinnati, wasn't that chartered by Congress?

Mr. RUTTENBERG. I think that is right.

The CHAIRMAN. Then there is the Congressional Medal of Honor men. Legally, they have more or less an Order of——

Mr. FULTON. I would like advice from the counsel. What is it, legally?

Mr. RUTTENBERG. My feeling would be, Mr. Fulton, in the absence of any specific statement in the legislation as to what is included, I would consider this order to be of the nature that Dr. Waterman has indicated he believed, that it would just be a type of recognition rather than a society or a nobility award of some sort.

Mr. FULTON. Will you distinguish, then, between what would be a Presidential award or a prize for a particular meritorious act, and the formation of an order to which a group of not more than 20 individuals may be nominated for appointment in any calendar year? You see, we are using the form of appointment as if it is a continuing society limited to 20 being nominated in any calendar year.

Mr. RUTTENBERG. Well, my feeling would be that the order concept would involve belonging to a recognized group, with perhaps a little embellishment, such as a rosette, that type of thing, but not carrying any connotation such as the peerage or distinction in order of rank in the United States.

The CHAIRMAN. The Order of the Purple Heart was established by George Washington.

Mr. RUTTENBERG. Well, I think that would be a fair precedent.

Mr. FULTON. Section 5, page 4, looks to me, as a corporate counsel, like a pretty difficult section to construe.

The CHAIRMAN. We have agreed to strike that out, the whole section there.

Mr. FULTON. Now, there is the question of the separation of the powers under the Constitution, and if the Executive is going to do something and make a Presidential award under our authority, the question is: Is this bill so drawn that under section 2(d) there is the joining in by the Congress in administrative or Executive acts?

That is not our function, and I think possibly the way the act is drawn on page 3 is a violation of the separation of powers. It is a peculiar setup where you have appointments, nominations, and confirmations in order to select people who are going to receive a prize for scientific endeavor, and I would like to have some precedents cited to us.

Mr. ANFUSO. Will the gentleman yield? Does the gentleman know that the President of the United States, on March 28, 1957, recommended a medal for special meritorious civilian achievement, and he specified the number of things for which a medal could be given, including natural sciences and engineering.

Mr. FULTON. That is fine, I agree with that, but the question is the method. Are we using the right method here? That is where the lawyers come in.

The CHAIRMAN. We are lucky to have a good lawyer here from the National Science Foundation, and a good one on our staff.

Mr. FULTON. I would rather have it not so much an afterthought, but I will accept it.

Mr. RUTTENBERG. Thank you, Mr. Chairman. If you would like me to comment on that a little bit——

The CHAIRMAN. Let's hear from the witness first. We are lucky to have our counsel with us constantly. We can get his opinion.

Mr. RUTTENBERG. Well, this is a question that has entered my mind in looking at the bill. It is my feeling that this could create a problem with respect to relationships between the executive and legislative branches. There have been various suggestions proposed with respect to recognition of achievement. One of the proposals that seems to have considerable merit, and which I believe is contained in the administration legislation which was sent up in January, to which one of the letters referred earlier this morning, would establish a board for this purpose which would be appointed by the President of the United States and which would make recommendations to the President as to the persons to be selected for awards.

The CHAIRMAN. Will the gentleman yield? I think NASA has a proposal—I haven't studied it, I haven't seen it—which might clear up a good many of these points.

Mr. FULTON. Could I just read to you from page 3, line 11? This is a requirement that the President do certain acts of an executive and a formal nature, after—

> Notice of the approval of any nomination as provided in the preceding sentence shall be furnished the President by each such committee without delay, and upon receipt of such notice from both such committees, the President shall appoint the nominee to the order (and confer the award described in subsection (b) of the first section of this act) in such manner and with such ceremonies as he may deem appropriate.

I am certain that the President of the United States isn't going to do it. He is not going to be told who to put on by a majority. Sup-

pose we need to have a compromise, and you get half Republicans and half Democrats, and we get a deal where it will be by the population of the States. By the time you sift all that out and make the President do it, and you have a Democratic Congress and a Republican President, you are going to force the President to appoint whoever we say.

The CHAIRMAN. I think the gentleman is correct in that respect, and I think that has to be changed there so as to conform with the Constitution. Under the Constitution we can send a nominee to the Senate, but it doesn't go to the House for confirmation. There would have to be some changes made in that section, I think.

Mr. RUTTENBERG. If I can make one more point, Mr. Chairman.

Mr. Fulton, a few moments ago, expressed some concern about creation of some sort of office or position or order or rank here. It would appear that the way section 2(d) is presently worded it is more in the direction of an office by requiring congressional approval than if it were just an Executive function, based on recommendations from an executive board.

Mr. FULTON. But here is one point. This is a very peculiar thing, where we in effect in Congress do the appointing from a selected group of names nominated, and then the President has to accept them and has to go through whatever ceremonies he wants to put them in. Now, to me, that is a very retromingent procedure.

Mr. HECHLER. Would you explain that word?

Mr. FULTON. Retromingent. You can look it up.

Mr. MILLER. Mr. Chairman.

The CHAIRMAN. Mr. Miller.

Mr. MILLER. I wonder if we are not going at this in the wrong direction. Why wouldn't it be better if you are going to select these men for recognition, that they be selected from a panel submitted to the President, or that their names be submitted to the President by the National Academy of Sciences? Then the President from that list should make the selection. Who are we in Congress to recognize or be able to evaluate a scientist, whether or not the recommendation is good? If some scientist is a good publicity hound and gets his name in the papers, we learn about it.

On the other hand, there may be some fellow who concerns himself more with his test tubes, buries his head in books and in the laboratory, whom we would never hear about, who the scientists know is a man that makes a real contribution to science and is the man who should be recognized. I think if you are going to make such awards, an organization like the National Academy of Sciences should be the one to select these people and to recommend them to the President.

Mr. ANFUSO. We have that in the bill, Mr. Miller. We have already in the bill—page 2—that the recommendation shall be by the National Science Foundation, and it is open to discussion whether or not the National Academy of Sciences should make recommendations.

Mr. MILLER (reading):

> such design and bearing the inscriptions as the President, on the basis of recommendations submitted by the National Science Foundation, may prescribe, and (2) a lump-sum payment of such amount, not to exceed $10,000, as the President may prescribe in the case of each individual nominated for appointment to the order.

**Each individual appointed to the order shall at the time of appointment receive an award consisting of (1) a gold medal, to be known as the National Medal of Science, of such design and bearing such inscriptions as the President, on the basis of recommendations submitted by the National Science Foundation, may prescribe, * * *

We are not talking about the qualifications of the man, you are talking about the design of the medal he will receive.

Mr. BERESFORD. I believe section 2(a), line 8, you want changed.

Mr. MILLER. You are saying that you are going to have one central clearinghouse for these people. Now I think that the recognized clearinghouse of scientists in the United States is the National Academy of Sciences. It should be the one that makes this recommendation. If that has been discussed before, I don't say it here, of course, but I would like to know what conclusion is right.

The CHAIRMAN. I would suggest this, if I might. As I understand it, some of the witnesses have a proposal for a rewrite of a portion of this bill. If we could get to that, they may have some very good ideas.

Mr. MILLER. I think that would be very fine. I yield back the floor.

Mr. FULTON. I have one further point.

The CHAIRMAN. We want to get to the next witness.

Mr. FULTON. But I have one further point. The question is, Under the bill as written, could an Indian get this award? It doesn't have to be answered now.

Mr. HALL. If the gentleman will yield, I can answer that, as to part of the Indians. The Cherokee Indians are citizens of the United States, in the State of North Carolina. I think the same pertains to the Oklahoma Band of Indians.

Mr. MILLER. How about the Navajos?

Mr. HALL. I don't know.

Mr. FULTON. We have some in Alaska.

The CHAIRMAN. Well, if they are citizens of the United States they could get the award.

Mr. FULTON. The people on the island of Samoa are not citizens, they are nationals. So there is a U.S. possession where they could not receive it. The Russians can bestow their awards on anybody in the world. Americans have already received them. Why are we so insular that we only bestow it on people who have filed applications for naturalization? If we are going to make this a Presidential award, why don't we make this a Presidential award for outstanding work in science, because a lot of these people may have cooperated with us. I would hate to put it on a very narrow basis. I say to the author of the bill that I think it is a good idea, but I certainly feel that the method of doing it needs to be revised and it needs some thought.

The CHAIRMAN. Let's hear from the witnesses that have some proposals.

Mr. FULTON. Well, I don't want to take more time.

The CHAIRMAN. All right, Doctor, we certainly thank you, sir, for the fine statement this morning to us, and we would like to enlist the assistance of the counsel as we move along with the bill.

Dr. WATERMAN. We are very glad to do so, Mr. Chairman.

The CHAIRMAN. Who is the next witness this morning?

Mr. BERESFORD. We have been asked to hear Dr. Bronk next.

The CHAIRMAN. Thank you very much, Doctor.

Mr. FULTON. We are glad to have Dr. Waterman with us, as well as Dr. Bronk.

The CHAIRMAN. Dr. Bronk, will you give us just a little bit of your background, because I think this is the first time you will have appeared before this committee.

Dr. BRONK. Well, it is a very great pleasure to be here. I was sorry I couldn't be with you last week, but I had an unavoidable engagement.

The CHAIRMAN. We missed you.

STATEMENT OF DR. DETLEV W. BRONK, PRESIDENT, NATIONAL ACADEMY OF SCIENCES, AND CHAIRMAN, NATIONAL SCIENCE BOARD

Dr. BRONK. I can only speak as an individual, not as President of the National Academy of Sciences, nor as Chairman of the National Science Board, because I have not consulted either of these bodies. Probably such wisdom as I may be able to bring arises from the fact that I am a resident of the State of Pennsylvania.

Mr. FULTON. That is very fine.

Dr. BRONK. I have spent 20 years with the University of Pennsylvania.

Mr. Chairman, I find myself in a dilemma, because I am enthusiastically in favor of the general principle of the bill and what it seeks to achieve. Also, not because I am from Pennsylvania, I find myself in agreement with many of the points Mr. Fulton has raised. It seems there are various aspects of the bill which should be changed, clarified, and thought through as to their implication.

I have warm appreciation for Mr. Anfuso's desires in this matter. There is no question but that we need greater emphasis in this country upon all types of creative activity.

If we are going to go forward as a great nation we are going to have to—I won't say recapture, because I don't think we ever lost it—but I think we have to reemphasize those pioneering qualities of our ancestors that made our country great. It is going to be very easy for us to slip back into merely sitting on our hands and holding what we have got.

I think that science is one of the adventurous opportunities for our country. It is only one, however, and because of that I have liked the comments which have been made this morning with regard to extending the scope of these awards to include creative distinguished achievement in many other fields of endeavor.

When it comes to the—now let me speak as a scientist. When it comes to selecting 20 individuals to receive the award, I would be less than candid with you if I didn't say that I see difficulties, but let me hasten on to say that because I see difficulties is no reason why this can't and shouldn't be done. But I think you should be alerted to the fact that it is not going to be easy to look over the United States and say: "Here are the 20 most distinguished achievers in the field of science this year." Those of us who are responsible for the administration of educational institutions know the difficulty one encounters when you have distinguished service professorships.

At the Rockefeller Institute we received a bequest of $1 million last year from an old lady, and I thought a good use for this would

be to create two distinguished professorships, and I began to think who I was going to choose as the two. I went back to my board and said "Let me change my recommendation, and let's use it for fellowships for younger people, because I simply couldn't go through my faculty and say, 'These are the two most distinguished'." If I had done so I am sure I would have had a lot of unpleasant difficulties on my shoulders.

As I look over the country, I just don't at the moment see how you would pick out 20 and say "These are those who have made the most distinguished achievements this year, or during the last 5 years, or during the last 10 years." One of the difficulties you will encounter is the one that has been referred to by Mr. King. No man stands alone. He stands on the shoulders of a lot of other people who have come before him and who have been working with him, and in the case of science this is particularly true.

We are all dependent upon what other people have done and are doing. Oftentimes the younger people or the more modest people make the contribution which enables another individual to take the last obvious step which then receives the recognition. Well, now, this is human life, and I am sure you are going to have these inequities. And, as I say, I don't think you ought to give up a good idea just because there is difficulty; but I want you to be aware of the fact that there will be that difficulty, and if you pick out 20 people there are going to be a hundred people or a thousand people—not a thousand but probably a hundred or 200 who will say, "Well, what have those 20 done that is more significant than what I have done?" And there will be some who will say, "Well, I contributed a great deal which made it possible for this particular character to do what he received the award for."

If you were to ask me how you can get around this very serious difficulty, I would say, seriously, that it would probably be well either to increase the number very largely, in which event you reduce the significance of the award, or keep it on the lower side, so that it will be sufficiently unique so that plenty of people will say, "Well, I didn't get it, sure, but neither did Joe Doaks or John Smith, or someone else."

I think another way in which you could handle it would be to divide it up into categories and make an award for a distinguished—I wouldn't say the most distinguished, because as soon as you do that you get into all sorts of difficulties and unrealities—but to say for a distinguished achievement, let us say in the field of biology; another in the field of the earth sciences, another in the field of physics, another in chemistry, another in mathematics, another in the behavioral sciences, including psychology.

The CHAIRMAN. What about space science?

Dr. BRONK. Well, sir, space science includes a great many fields. As President of the Academy, I had the privilege of creating the Space Science Board of the National Academy of Sciences. I have the very great privilege of serving on the Space Council. We include—as you know better than I from your distinguished post—many fields—biology, medicine, physics, astronomy, geochemistry. I think that distinguished achievements in the development of space research could be accomplished in these various subdivisions.

Take the work of Jim Van Allen. This would properly be defined as physics, if you will. Sure, it was exploration of space also. One

of the most significant aspects of this bill, it seems to me, is the emphasis that it gives, as I said at the beginning, to creative effort, and I am going to use this opportunity to put in a plug for what I think is so important in our country.

I think that you gentlemen are in a unique position to give tremendous impetus to what is essential to the life of our Nation and our future development. This is the guidance, the stimulus, the encouragement to this particular area of creative effort. I don't want to limit our national future to scientific achievement, creative effort in the field of arts, industry, government; all of these things are achievements which we desperately need in order to keep our vitality high. Anything you can do to increase the sense of recognition of what is accomplished in these various fields is, I think, going to be invaluable to the future of our Nation.

Let me cite a specific instance that I think of which occurred when I was at the University of Pennsylvania. At that time there was a vice president of the University of Pennsylvania who was elected a foreign member of the Royal Society of London. He was the first man to be so honored since Benjamin Franklin. The manager of the Philadelphia Bulletin at that time was my very good friend and classmate at Swarthmore College, but that achievement was recognized by, if I remember correctly, four or five lines.

There was about three-quarters of a column given to a fireman who fell down a ladder in a Germantown firehouse. I am not criticizing any newspaper. Newspapers have to represent the people of our country. I hope they also give leadership, but this reflected the relative emphasis, the relative appraisal of significance of achievement of interest to our country. That was a good many years ago. Since that time we have made tremendous progress in recognizing the worth of creative effort, but I hope you gentlemen will give continued stimulus to a greater development of this recognition, because that is the thing that is going to encourage people to make significant advances in science. It is not easy for a person to work effectively if he does not have the respect of his fellow citizens. Surely many do, and many will, without regard to that sort of encouragement, but the greater the appreciation for creative effort, the more young people will go into that field of activity.

The CHAIRMAN. I think that is a very fine statement. I think if you went along that line here you would sell us a bill in a hurry, Doctor.

Mr. FULTON. And not a bill of goods.

The CHAIRMAN. Not a bill of goods, but a bill.

Mr. Anfuso is the author of the bill, and I am going to recognize Mr. Anfuso.

Mr. ANFUSO. Mr. Chairman——

Dr. BRONK. May I say just one thing? I have been tremendously heartened and encouraged by the creation of this committee, and I hope that we, as scientists, may have the privilege that I know we will have of working with you, and any time you want anything from me you are going to get it.

The CHAIRMAN. Well, we are going to call on you, too, from time to time. This is going to be an active committee. We appreciate your help.

Mr. ANFUSO. Dr. Bronk, I want to say that I feel heartened by what you have said here this morning. I think we all do. I have heard you on television before, and you are certainly a very convincing speaker and very sincere. What you have said here today has been very illuminating. As the author of this bill, I certainly don't have all of the answers. I am trying to do a job like every member of this committee is trying to do. I have felt the need for it. I have felt some need of national recognition and some incentive, and I thought this was a method of doing it.

I would sincerely welcome from you any suggestions. You have a copy of the bill. We are not in a hurry. I wish you would take it with you; and if you have any recommendations to make, I certainly would like to receive them. I am sure the rest of the committee would.

Dr. BRONK. I will be glad to inquire more broadly from colleagues of mine in various fields and get their reactions and transmit them to the committee.

Mr. ANFUSO. Thank you very much.

The CHAIRMAN. Any questions?

Mr. MILLER. I think Dr. Bronk's last statement was one that would fill the bill exactly.

The CHAIRMAN. My thought is this, gentlemen of the committee: We are getting some excellent ideas here, and I think even our colleague who is the author of the bill realizes we are getting excellent ideas this morning. Why not go ahead in a general way with the testimony like we have had of Dr. Bronk, and get it all in a general way, and then we will adjourn and we will ask the counsel from our committee, Mr. Beresford, the counsel from the National Science Foundation, and from NASA, and any other counsel, too, that wants to help us to go over the bill, to incorporate the recommendations and come back under the same number, which will keep it in the same authorship, and present it to the committee for discussion in detail?

If there is no objection to that, we will proceed with that procedure. Is that all right?

Mr. HECHLER. May I ask just a brief question?

The CHAIRMAN. All right, Mr. Fulton.

Mr. FULTON. I yield.

The CHAIRMAN. Well, I recognize Mr. Fulton.

Go ahead; then we will recognize Mr. Hechler.

Mr. FULTON. The question comes up whether we really need to go as far as creating an order, an order that is an association, in a way. My feeling on it would be to have a Presidential award of recognition, and that it should not particularly have a monetary encomium with it so closely associated. I think the people who get it are much beyond the money award. I think that reduces it maybe to a pattern that has been set in certain philanthropic trusts and foundations. Maybe this should be just an award for merit. What do you think of that?

Mr. ANFUSO. May I comment on that before Dr. Bronk?

Mr. FULTON. I yield. We are trying to help you get a better bill.

Mr. ANFUSO. I understand that. What I had in mind when I put in the cash award, Dr. Bronk, was something along the lines that Dr. Waterman spoke about, and my distinguished colleague, Mr. King, spoke about. There are certain unrecognized people who are doing research and they are certainly not rich people. They are very poor

people, and they have been slaving and working on their projects. If they come up with something that the National Academy of Sciences or the National Science Foundation thinks is worthy of recognition, I thought that besides the medal they could use the $10,000, frankly. Perhaps it is not even enough. I wanted to get your views on it.

Dr. BRONK. I don't have any personal feeling on the stipend. I am not going to say it should not be given, because all those who are going to get it will be after me. They all have something they can use it for. I remember a few months ago, driving with a friend of mine, who got a Nobel Prize a few years ago, and as we came down 23d Street somebody in the taxi said, "What did you finally decide to do with your Nobel award?"

He said, "Well, I haven't decided yet, but my son certainly has a solution for it. He said, 'Well, Dad, I suppose now we can get that Jaguar we have been wanting'."

Everybody has something they want, and certainly no scientist that I know of, with a few exceptions who didn't earn it through science, are so well-heeled that they can afford to say that they wouldn't like it. But as I say, I would like to think more about this.

With regard to the matter of the order, I agree with Mr. Fulton, for this particular reason: As I read it, I immediately envisaged the people who had been elected or appointed to this order with the award as beginning to create an organization, and pretty soon it would be the Order or the Society of the Holders of the National Order of Science. We have so many organizations already that I would like to see scientists guaranteed a little time in which to do some work, instead of going to more meetings of more organizations.

Mr. MILLER. Would that be an annual convention?

Dr. BRONK. They would set themselves up as another special group. I think that the recognition should be for distinguished recognition, wisely administered, wisely selected. This, I think, is the thing that you most want, and especially the emphasis which would be given on creative effort.

Mr. FULTON. Then could I ask the counsel—because this has a monetary authorization in it—has it been cleared by the Bureau of the Budget, knowing what these times are?

The CHAIRMAN. We have a budget report that was read to the committee. They cleared that.

Mr. MILLER. You better make it tax free.

The CHAIRMAN. It is tax free.

Mr. FULTON. We can get that later. The other point, then, of Dr. Bronk is this: On page 2, line 12, it says "living individuals who in his judgment." Isn't that an unnecessary restriction? The man might have died or been blown up in his own experiment.

Mr. HECHLER. You mean we should go back to 1789?

Mr. FULTON. No, it is during the year, and do you think a year is long enough? Maybe a period. You see, these experiments are probably taking longer than just a few months, a calendar year, and possibly the President should at a certain period determined by him, not oftener than once a year—but put it in a 3-year period or something.

The CHAIRMAN. It says the President shall from time to time nominate for appointment. Doesn't that cover it? Down below it says "not more than 20 shall be made in any one calendar year."

Mr. FULTON. I am going a little further than that. I am looking at the time when the scientific research or development has been done, and trying to correlate that with what we are doing. What is the period we are thinking of when we give this scientist the award for merit for doing something?

Dr. BRONK. This is a matter that I think should be carefully considered, with special regard to the implications. I know, I happen to be a member of the Swedish Academy, which makes one of the Nobel awards, and we are harassed by the fact that it is so worded that you are supposed to avoid it for a discovery, in the first place, and this is difficult, because how do you define a discovery. And secondly, people tend to be passed over, and then they say, "Well, he should have got it, but the time is gone when it would be appropriate."

I recall the case of Sir Charles Sherington, who had been one of the most distinguished contributors to the field of experimental neurology and the physiology of the nervous system. They said, "Well, he has done good work all of these years, but, of course, it is work of the past, now, and it isn't quite as distinguished as it was."

Then along came Adrian, now Lord Adrian, who made a very spectacular discovery, and those of us who wrote up that proposal for the award said "We propose the award to the two of them, because the discovery of Adrian brought out the significance over the past 20 years of the work of Sherington," and that finally unlocked the award to Sherington, as well as to Adrian. So if you make it too restrictive in period of time it is going to be difficult.

Furthermore, it takes time for scientific discoveries to mature and to gain significance, because a discovery is made and oftentimes it takes a while before people realize its importance.

Mr. FULTON. That is my next point. If you look on page 2, lines 14 and 15, you will see the "outstanding contributions in the field of science and engineering to the security of the United States or the progress of mankind."

Now, that puts a development phase on it, or a practical use, that I think is a needless restriction. As a practical matter, I feel that we should have more attention paid to pure research and the basic research should be stimulated as much as anything which has a direct application. Would you not agree with that, Dr. Bronk?

Dr. BRONK. Yes; although I think, Mr. Fulton, you could interpret the progress of mankind, if you were wise, broadly enough so that, for instance, a new intellectual concept, I would hope, would be interpreted as progress to mankind. I know a lot of people would say, "Well, what does that get you?"

Mr. FULTON. Of course, the way it is written, there, it sounds like first we are interested in the security of the United States, or the progress of mankind, whichever we can get.

The CHAIRMAN. Any further questions?

We have some other witnesses this morning.

Mr. MILLER. Doctor, would it be better, rather than to say 20 a year, to fix the total number that should constitute the recipients of this award, and then provided that you couldn't go beyond that, only in the event of death could a vacancy be filled? I believe that is the way the French Academy works, isn't it?

Dr. BRONK. I would put an upper limit on it, certainly, but I wouldn't bind myself to the necessity for making 20 or 15 or 10, but I

wouldn't go more, because if you do that, then you open the doors and you say, "Well, why do we stop here? We take in this fellow, that fellow, and the other fellow."

Mr. MILLER. One hundred people in the United States. You may never have more than 90 at any one time. Then it would be something valuable.

Dr. BRONK. I want to emphasize the difficulty in this. I wouldn't want to be responsible for choosing the 20 most distinguished legislators on Capitol Hill each year.

Mr. MILLER. I could say, Doctor, there are 25 members on this committee, so you would have to eliminate 5. And, of course, the seniority system prevails here.

Mr. FULTON. On page 2, line 22, would you limit it solely, as to recipients, to a citizen of the United States, or under subparagraph 2? I wouldn't. I wonder what your idea was.

Dr. BRONK. Well, it would be an entirely different type of award, if you didn't. It would make it more complicated if you do not limit it to the citizens of the United States. On the other hand, the point you brought up, to wit, that the award that was given to a citizen of the United States might have been very largely based upon work done by an Englishman or a Swede or a Dane. That is something you are going to be up against.

Mr. FULTON. In cooperation with them.

Dr. BRONK. Yes. I don't think there would be any resentment on the part of those, because they would undertsand it was a national award, and yet it does tend to minimize the international character of science. I sat Friday and Saturday on a panel of the President's Science Advisory Committee on World Affairs, and being deeply involved in all of the international considerations in regard to science, I can't help but recognize that this tends to do that—yet it is an award to a citizen, so I don't think you would have any difficulty there.

Mr. FULTON. These exchanges of scientists from time to time, we could probably have an award to a distinguished scientist behind the Iron Curtain who had done a job, instead of just having political leaders come over and receive decorations, we might really be expanding the field of international cooperation, and particularly I don't like limiting science by national borders.

Mr. MILLER. I think you have something there.

Mr. FULTON. What does the doctor think of that?

Dr. BRONK. As I have just said, this is one of my fundamental tenets, that you can't say it is United States science or Swedish science or French science. Knowledge is knowledge. On the other hand, I think you can say that this citizen of the United States did do a distinguished piece of work. It doesn't say it was more distinguished than that of a German or an Englishman.

The CHAIRMAN. Of course, it is U.S. money.

Dr. BRONK. We do, of course, have international awards. The National Academy of Sciences has about 8 or 10 medals, some of which carry reasonably good stipends, and they are made without regard to nationality. I would say about 25 percent of them are to citizens of other countries. Then there is the Atoms for Peace Award, created by the Ford Co. fund, and this is international in character. In fact, the first two awards were one to a Dane and one to a Swede.

Mr. FULTON. Page 3, lines 20 and 21, section 3, the term "science" is attempted to be defined. Actually, what we are going to try to do is put in a broad definition of the fields that the recipient shall be engaged in where the meritorious service is recognized. Could you supply for us later, or have one of your associates give us some suggestion as to how far we should go, the breadth of the field, and the outer limits we should put on it? In conclusion, in a rather humorous vein, when the Committee on Science and Astronautics of the House and the Committee on Aeronautical and Space Sciences of the Senate shall approve by the affirmative vote of a majority of its total membership and notice is given to the President; upon receipt of such notice from both such committees, the President shall appoint the nominee to the order, and note the words "shall" and "confer the award" described in such manner, and with such ceremonies as he may deem appropriate.

Now, we have the separation of powers, and usually it is the President who appoints and sends up here. Would you not in this same light vein that I am speaking of think that that is rather retromingent?

Mr. SISK. Maybe we could get some explanation from Dr. Bronk on the term the gentleman is insisting on using?

Mr. FULTON. That is all.

The CHAIRMAN. Now we have two more witnesses this morning.

Mr. BERESFORD. Next is Mr. Richard Horner, Associate Administrator of NASA.

The CHAIRMAN. Mr. Horner, you are with what agency?

Mr. HORNER. National Aeronautics and Space Administration.

The CHAIRMAN. You are chief counsel?

Mr. HORNER. I am the Associate Administrator of the National Aeronautics and Space Administration. Mr. Nunn, from the General Counsel's Office of the Administration, is here with me.

The CHAIRMAN. Now we asked you to come and make comments on this proposed legislation. We would be happy to have your statement.

STATEMENT OF RICHARD HORNER, ASSOCIATE ADMINISTRATOR, ACCOMPANIED BY ROBERT G. NUNN, JR., ASSISTANT COUNSEL, NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Mr. HORNER. Thank you.

Mr. Chairman and members of the committee, I am very pleased to have this opportunity to come and discuss H.R. 6288 with you. I do not have a formal statement. I do have some notes as a result of our study of the bill.

The CHAIRMAN. Mr. Horner, what is the view of the NASA in reference to this measure?

Mr. HORNER. We have provided to the committee last week a letter which I believe set forth the views of the Administration.

The CHAIRMAN. The counsel read that letter.

You read it in full, didn't you?

Mr. BERESFORD. Yes, sir.

The CHAIRMAN. Do you have any suggestions there? Someone told me you had a suggested change.

Mr. HORNER. No, sir; we have not addressed ourselves to making any specific changes in the bill. We spoke generally in favor of the objectives of the first portion of the bill as it relates to the rewarding of scientific endeavor. We spoke as being not in favor of that portion of the bill as relates to the rewarding of first manned orbital flight.

The CHAIRMAN. In other words, you are against section 5?

Mr. HORNER. Yes, sir.

The CHAIRMAN. You favor the remainder of the bill?

Mr. HORNER. It might be worth while to enlarge just a little bit on our reasons, reasons that were not given in the letter. We find ourselves in agreement largely with the previous witnesses before the committee. More specifically, as regards the first part of the bill, and as it relates to our work, we would find some difficulty, I think, in isolating the values and contributions of specifically the physical scientists, the engineers, and the mathematicians, and would suggest that the base be somewhat broader.

We are primarily engaged in applications of science, and we find that, of course, there is an ever-increasing coupling between scientific disciplines and in their utilization.

We find that we are using very frequently the products of the life sciences, the social sciences, as well as the physical sciences, and, therefore, this leads to our suggestion of somewhat broadening the base. I believe there has been suggested legislation by a committee appointed by the President in that respect.

As regards the other section of the bill, section 5 of the bill, I would like to point out just one or two factors which leads us to the conclusion that we would not be in favor of the proposed award, some of which were not included in our letter.

First of all, as I believe we have already pointed out, we do not feel that it is necessary in terms of the advancement of space travel, certainly not at this time, and in the near term, with specific reference to our efforts in Project Mercury, the objective of which is to demonstrate successfully manned orbital flight, it might even be detrimental. It would certainly create problems of administration for us. One could imagine the situation where, recognizing that the astronauts that are involved, the seven astronauts that have been selected, very clearly established their courage, their patriotism, and their dedicated interest in the advancement of space science, the countereffects of adding what would almost be interpreted certainly in some quarters as the materialistic commercialized motivation, might not have the intended or the desired effect.

In any case, only one of the seven astronauts that have been chosen can possibly be first. It would be difficult to select that one.

Mr. FULTON. That has been cut out. I don't think we need go into that.

The CHAIRMAN. Yes, the committee is pretty well agreed to cut that out.

Mr. HORNER. In that case, I have no further comments, Mr. Chairman. I will be glad to respond to any questions that the committee feels appropriate.

The CHAIRMAN. The committee is more or less sounding this thought: In lieu of section 5, perhaps a separate bill covering a matter of insurance for extra hazards might be investigated. What would you think of that, very briefly?

Mr. HORNER. I believe, Mr. Chairman, that that deserves very close attention. I think that has possibilities of being very desirable and might be very helpful to the program as a whole.

Mr. ANFUSO. Mr. Chairman.

The CHAIRMAN. Mr. Anfuso.

Mr. ANFUSO. Would you, Mr. Horner, supply us with a revised section 5? I know that you have studied the problem.

Mr. HORNER. We will be glad to provide you a draft.

The CHAIRMAN. Now, Mr. Horner, would you assist the committee in this respect by letting us have the benefit of the counsel for NASA to work with our able counsel and with the attorney for the National Science Foundation in going over the whole bill and embodying such recommendations as have been made to the committee which sounds plausible, reasonable, and acceptable?

Mr. HORNER. We shall be glad to do that.

The CHAIRMAN. Thank you.

Mr. FULTON. Would the gentleman yield for a request?

The CHAIRMAN. Mr. Fulton.

Mr. FULTON. I would like Mr. Anfuso particularly to hear this. The question arises on the jurisdiction of this committee when we would get into anything that has to do with extra hazardous pay of military personnel. I, for one, do not want this committee to get into anything that the Armed Services has sole jurisdiction of, and I would like our counsel to consult with your counsel before we even take up any such proposed bill that might have insurance or extra compensation for hazardous pay of military personnel, all of which these seven astronauts are. They are in the armed services.

The CHAIRMAN. I will agree with the gentleman. We should confine our efforts to those things that are not within the province of the Armed Services Committee.

Mr. SISK. Mr. Chairman.

The CHAIRMAN. Mr. Sisk.

Mr. SISK. I have no questions of the witness, but I have a comment I would like to make before we adjourn, if I might.

The CHAIRMAN. Just one moment. We certainly thank you, sir, for coming here. We have one more witness this morning. We will have to adjourn now because we have a rollcall. We will have to take that up next week.

Who is the last gentleman?

Mr. BERESFORD. Mr. Robbins.

The CHAIRMAN. Could you be on hand next week? Are you here in Washington?

Mr. ROBBINS. I am here in Washington, but I will be out of town Tuesday and Friday.

The CHAIRMAN. We could have you about Wednesday. We would like very much to have you at that time.

Mr. ROBBINS. Thank you.

The CHAIRMAN. In the meantime, our counsel will contact you in reference to your suggestions which might be framed in changes in the bill.

Mr. ROBBINS. Fine.

Mr. FULTON. Would you like to submit a statement for our record and we can have a copy made for each member of the committee?

The CHAIRMAN. Well, the witness has been here all morning and he is a competent witness, and the committee really ought to hear him, briefly, anyway.

Mr. ROBBINS. Thank you.

I have had the pleasure of listening to the witnesses this morning and there are a few comments I would like to make on some issues raised that are not in our statement, if I might have that opportunity.

Mr. FULTON. Why don't we go ahead, then, until the second bill?

The CHAIRMAN. Well, at this time we will hear a comment from our colleague, Mr. Sisk.

Mr. SISK. I simply wanted to clarify, in view of some comments made earlier, about some redrafting work which might be done on this bill. If this occurs or if there is any of this work to be done before we have another hearing, I have just one short statement I would like to make. It has to do with something I feel very strongly about, and that is about broadening the scope of this bill to include other than American scientists.

I will bitterly oppose that, because I think it completely misses the point of the intent of this bill. I have not discussed this with the author, but I feel very strongly, and I just want to serve notice now if this should be broadened to include world scientists, where I think we already have other programs, I certainly shall oppose that.

The CHAIRMAN. May I say to the committee, of course, whatever is drafted by counsel is going to be submitted to the committee, and the committee is going to have a chance to discuss every feature of it, but I think that our colleague, Mr. Anfuso, has a good idea.

I would like to see it put in proper shape so the committee can sponsor it and put it through the Congress.

Mr. MILLER. I would like to join the chairman in paying my compliments to Mr. Anfuso.

The CHAIRMAN. If there is no objection, the committee will adjourn.

(Whereupon, at 12:11 p.m., the committee adjourned, to reconvene at the call of the Chair.)

NATIONAL MEDAL OF SCIENCE

WEDNESDAY, AUGUST 5, 1959

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE AND ASTRONAUTICS,
Washington, D.C.

The committee met, pursuant to call, at 10 a.m., Hon. Overton Brooks, chairman of the committee, presiding.

The CHAIRMAN. The committee will please come to order.

I have a note from Mr. Ducander, committee staff director, saying that tomorrow, August 6, at 10 a.m., Secretary Brucker will be here to present the Army flag to the committee.

I think it is fair to say it is a beautiful flag, with something like 150 streamers on it. It is really quite an honor to the committee to have an official presentation by the Army and by the Secretary of the Army. I hope that all of us will be here. We will get the word out to the other members to be here for that occasion.

This morning we have one witness. Mr. Beresford, who is our witness?

Mr. BERESFORD. We have Mr. Robbins held over from the last session on this subject, who is from the National Society of Professional Engineers.

The CHAIRMAN. We are happy to have you, Mr. Robbins.

STATEMENT OF PAUL H. ROBBINS, EXECUTIVE DIRECTOR OF THE NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

Mr. ROBBINS. Yes. Thank you very much. I have a statement I have prepared which I believe was distributed to the committee before the last session.

If the chairman please, I have a few supplemental comments that I would like to present for the consideration of the committee, largely resulting from the discussions last time, if it might be helpful.

The CHAIRMAN. Yes.

Mr. ROBBINS. If it is agreeable I will present the prepared statement for the record and appreciate the opportunity of saying a few general words largely on the basis of the discussions last time.

The CHAIRMAN. Fine.

Mr. ROBBINS. My name is Paul H. Robbins. I am the executive director of the National Society of Professional Engineers with headquarters in Washington, D.C.

The national society is a nonprofit membership organization composed of professional engineers engaged in virtually all branches of the engineering profession and all fields of professional endeavor.

The CHAIRMAN. You just proceed as you wish, Mr. Robbins.

(The statement of Paul H. Robbins follows:)

STATEMENT OF PAUL H. ROBBINS OF THE NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

My name is Paul H. Robbins. I am the executive director of the National Society of Professional Engineers with headquarters in Washington, D.C. The national society is a nonprofit membership organization composed of professional engineers engaged in virtually all branches of the engineering profession and all fields of professional endeavor. Each of the society's 50,000 members is registered under applicable State engineering registration laws which certify that registrants thereunder have met the prescribed qualifications for engaging in the practice of professional engineering. The society's membership is affiliated through 50 State and territorial societies and approximately 400 local community chapters.

Ever since its inception over a quarter of a century ago, the national society has taken an active interest in matters of national legislation affecting, or of interest to, the engineering profession. It is because of this continuing interest that we present this statement to the Committee on Science and Astronautics in support of H.R. 6288.

In our experience over the years in many programs relating to engineering professionalism, we have learned and observed that there is perhaps no greater incentive to full development of individual engineers, both professionally and technically, than commensurate public recognition of the role played by the engineer in our national economy. The esteem in which the engineering profession is held by the public is directly related to the engineer's main goal—public service.

We realize that public recognition and esteem cannot be handed out on a silver platter; they must be earned. In our opinion, especially during the last 50 years or so, the engineering profession has proven without a doubt that it is deserving of recognition as a profession of the highest calling which, perhaps more than any other, has contributed to our high standard of living and our way of life. It is only fitting, therefore, that at this period in our history when technological progress may mean the difference between existence or obliteration, the Congress provide a program which will give meaningful recognition to individuals who make outstanding contributions in engineering and science.

The national society has, since 1951, sponsored the annual observance of Engineers' Week during the week of George Washington's birthday in an effort to improve the public's appreciation of the role of the engineer. We are proud to be able to say that the scope of each Engineers' Week observance has exceeded previous observances in all respects. During Engineers' Week conferences and meetings are held, talks are presented to high school students, exhibits and displays are shown, salutes are broadcast on radio and television, tribute is given by the President of the United States, and proclamations are issued by State Governors and municipal officials.

All of these efforts are designed to stimulate a greater understanding of the engineering profession, to encourage an active interest on the part of our young people in this vital field, and to emphasize the importance of safeguarding America's future with progress in engineering, science, and technology.

Because of our continuing and active participation in programs geared to improving the public's opinion of members of the engineering profession, we welcome the introduction of H.R. 6288. It is our belief that the procedure for recognizing outstanding contributions in engineering and science through the establishment of a national order will operate to the benefit of the engineering and scientific profession and, consequently, to the betterment of the Nation at large.

We are certain that all Members of Congress are aware of the statement made several months ago by the Secretary of the Department of Health, Education, and Welfare to the effect that freshman engineering enrollment had dropped 11 percent from the previous year. A recent survey conducted among engineering deans in order to determine the significant factors leading to this decline indicated that our young high school graduates were selecting careers in pure science or mathematics, rather than engineering. This was caused, they said, by increasing emphasis in newspapers, Government, and private publications, and other media on the importance of "science" to our progressing economy. The

contribution of "engineering," the practical application of the laws of nature has, frankly, been somewhat overlooked.

We do not intend in any way to minimize the excellent contributions of this Nation's highly trained scientists and mathematicians, but we do believe that the cause of indoctrinating the public, and hence our young high school graduates, with an understanding of the contribution of America's engineers, can immeasurably be improved if the subject bill were amended to expand the proposed national order to a national order of science and engineering. Such a change, in our opinion, will represent an expression of Congress that engineering is as vital to our overall technological program as is science and mathematics. We believe this suggested change is further justified by the subject bill's stated purpose of providing recognition for individuals who make outstanding contributions in science *and engineering*." [Emphasis added.]

The National Society of Professional Engineers earnestly recommends that H.R. 6288 be amended to provide for a "National Order of Science and Engineering," that it be speedily approved by this committee and adopted by Congress.

We sincerely appreciate the opportunity of appearing before the committee and stand ready to cooperate further in any manner possible.

Mr. ROBBINS. I felt it would be perhaps desirable to state as a basic objective what this legislation, as we understand it, is designed to accomplish.

I think Representative King outlined some five basic objectives, as he saw them. I was sorry that I did not get those down but, as I summarized that, I think that probably it could be summarized in three objectives, and, Congressman Anfuso—correct me if I am wrong—first we are endeavoring to encourage scientific effort throughout the Nation.

The second emphasis is to encourage individuals to enter into scientific discipline, both by training and by diligent effort and through experience.

The third—and this I thought was not perhaps getting the attention previously that it deserved—was to focus the Nation's attention on the Nation's need for scientific engineering effort.

We have got into many details, thereby losing the—shall we say—public relations value of being a mechanism whereby public attention can be focused upon the individuals concerned in the basic scientific efforts of our Nation.

In that respect, I would like to—and you would expect me to, I am sure—call attention to the relative importance of the engineer in this whole effort. There was much discussion previously on the basic research aspects of the award, and I do not mean for a moment to in any way depreciate those efforts. They are essential to our basic advances.

Mr. ANFUSO. Have you a minute?

Mr. ROBBINS. Yes.

Mr. ANFUSO. The chairman ordered a redrafting of the bill and in the revised draft, engineering is included.

The CHAIRMAN. I think it would be better to hear Mr. Robbins through and then take up the revised bill. But, if you prefer, we can read the revised bill.

At this time, however, that would disrupt his presentation.

Mr. ANFUSO. Maybe we ought to hear him, as you suggest.

The CHAIRMAN. Fine.

Mr. ROBBINS. Thank you very much.

I was about to say, while we certainly need basic scientific effort, I am sure the committee is aware far more extensive man-hours are

needed to interpret these basic scientific principles into workable hardware and things of value for the Nation, whether our Nation's economy, national defense or space probes or whatever it is.

In terms of numbers, we have probably greater needs for engineering applications than we do for basic research and please let me restate I am not deterring in any way from the emphasis on science. We need the basic research and highly trained people and this kind of legislation should basically recognize that effort.

But we also, from a public opinion standpoint, need to emphasize engineering and as the committee is well aware, we had this 11 percent drop in engineering enrollments last year, because we are basically saying in our public relations program that our effort at the moment is in science, whereas perhaps the greatest problem of our space problems now is our engineering, how do we make these things work, how do we make the guidance systems precise enough to guide and direct our space problems? I think, if you talk to most of the defense contractors on the missile program, you will find the far greater problem is an engineering problem, rather than any research in basic science. This is all by way of underlining this proposition that we should put emphasis on engineering equal to the basic research aspects and that the awards should recognize engineering as well as basic science research.

There was some testimony that this should be broadened to all lines of intellectual effort and there certainly can be no arguments on the advantages of that. But again as we read the bill, it is again designed to focus attention on the fact that the major concern of the Nation today is in scientific effort.

If we broaden it to include other disciplines and make this a general bill of award for intellectual effort, we have, by that much, decreased emphasis on science and engineering.

We would suggest, therefore, that it stay a science and engineering emphasis.

There was also some discussion in the previous testimony about the desirability of writing in to the bill certain delineations of fields. We think this might be advantageous. This would emphasize again the areas of scientific effort that the Nation needs and how this would be done, whether there be an allocation of so many awards for chemistry, so many for physics, so many for mathematics, so many for engineering and so many for the other physical sciences. I am sure the committee and its counsel could come up with a further arrangement on that.

To make clear the need we feel in this regard, let me emphasize in many areas of science the names of those engineers. Dr. Vannevar Bush was trained as an engineer but certainly he was, during World War II, recognized as a leader in the scientific effort.

Irving Langmuir who was recognized as contributing so much in the development of electronics, was an engineer.

Dr. Keith Glennan, head of our Space Agency is an engineer. So we emphasize again the feeling we need to emphasize, both engineering and science, rather than the feeling this committee had before that it is basic research that the committee had to emphasize.

I think that summarizes the comments I have on this.

I would be glad to answer any questions.

The CHAIRMAN. I think you have covered the situation real well. We have an entirely new bill and, unless there are some questions now, we could read the new bill and then, if you wish to comment further on its contents, that might be appropriate.

Mr. Beresford, would you read the bill? But first, tell us, during your work in drafting it, did you have any assistance?

Mr. BERESFORD. Yes, sir. I was assisted by Mr. Ruttenberg, the Counsel for the National Science Foundation, and Mr. Nunn, Assistant General Counsel of the NASA.

The CHAIRMAN. And you have all agreed on this bill?

Mr. BERESFORD. Yes, sir.

The CHAIRMAN. I might say to the committee, with regard to the new bill to be introduced in Mr. Anfuso's name, that there is a question whether it would be better to strike out all after the enacting clause in the old bill and retain the same number or introduce a new bill. I would yield to my colleague, Mr. Anfuso, on which he would rather have.

Mr. ANFUSO. I will yield to your better judgment, Mr. Chairman.

The CHAIRMAN. I think probably a new bill would be all right, so we will report this bill out.

Mr. Anfuso will introduce it and then we will have to ratify it tomorrow.

Mr. ANFUSO. All right.

The CHAIRMAN. Now, would you read the bill, sir?

Mr. BERESFORD (reading):

A BILL To establish a National Medal of Science to provide recognition for individuals who make outstanding contributions in science and engineering

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That (a) there is hereby established the National Medal of Science—hereinafter referred to as the "medal"—to be awarded as provided in section 2 of this Act.

(b) Each individual awarded the medal shall receive an award consisting of (1) a gold medal, to be known as the National Medal of Science, of such design, and bearing such inscriptions as the President, on the basis of recommendations submitted by the National Science Foundation, may prescribe, and (2) a lump-sum payment of such amount, not to exceed $10,000, as the President may prescribe in the case of each individual awarded the medal.

SEC. 2. (a) The President shall from time to time award the medal, on the basis of recommendations received from the National Academy of Sciences or on the basis of such other information and evidence as he deems appropriate, to living individuals who in his judgment are deserving of special recognition by reason of their outstanding contributions to knowledge in the physical, biological, mathematical, or engineering sciences.

There has been a slight change there and at my suggestion it was broadened to cover all engineering sciences.

(b) Not more than twenty individuals may be awarded the medal in any one calendar year.

(c) An individual may not be awarded the medal unless at the time such award is made he—

(1) Is a citizen or other national of the United States; or

(2) Is an alien lawfully admitted to the United States for permanent residence who (A) has filed an application or petition for naturalization in the manner prescribed by section 334(b) of the Immigration and Nationality Act and (B) is not permanently ineligible to become a citizen of the United States.

(d) The presentation of the award shall be made by the President with such ceremonies as he may deem proper, including attendance by appropriate Members of Congress.

SEC. 3. Notwithstanding any other law of the United States, or any law of a State, Territory, Commonwealth, or possession of the United States, no part of the sum referred to in clause (2) of subsection (b) of the first section of this Act shall be assignable, or be subject to any tax or to garnishment, attachment, or other legal process, under any circumstances whatsoever, nor shall the payment thereof be anticipated.

SEC. 4. There are authorized to be appropriated such sums as may be necessary to carry out this Act.

The CHAIRMAN. Since this is the first hearing on the revised bill, did you hear enough of it to wish to comment on any portion of it?

Mr. ROBBINS. I did not, I am sorry to say, hear who was to recommend to the President these suggestions.

The CHAIRMAN. How does that read, Mr. Beresford?

Mr. BERESFORD (reading):

The President shall from time to time award the medal on the basis of recommendations received from the National Academy of Sciences or on the basis of such other information and evidence as he deems appropriate.

Mr. ROBBINS. Was there some reason why that was felt to be preferable to the wording that was included in the original bill?

Mr. BERESFORD. Yes. Both Dr. Bronk and Dr. Waterman favored the National Academy as the recommending body for, I should say, public opinion reasons because it would be regarded as more objective and more representative of the scientific community.

Mr. ROBBINS. That was one of the points that I did not understand originally. As we read the bill, the Science Foundation merely provided the basis of recommendations for the design of the medal and the President was to receive from Government agencies, public or private organizations and other persons who are involved or related to science or engineering the information and evidence.

Mr. BERESFORD. That is true.

Under the old bill as introduced, he was to make the award on the basis of recommendations received from the Government agencies, as you say.

Mr. ROBBINS. Yes; we preferred the other broader perspective, so that these recommendations could come from any source.

The CHAIRMAN. Well, these can. It says:

from other evidence or information as he deems appropriate.

I am sure the thought is if, for instance, an outstanding figure in science should be overlooked for some reason, the President could award the medal to him.

But in the normal run of things, the National Academy of Sciences would make the recommendations and if they are purely objective and really representative of achievements, then they would probably be accepted.

Is that it, Mr. Beresford?

Mr. BERESFORD. Yes.

Mr. ANFUSO. Mr. Chairman——

The CHAIRMAN. Mr. Anfuso.

Mr. ANFUSO. First of all, I would like to congratulate you on the very fine statement you made.

Mr. ROBBINS. Thank you, sir.

Mr. ANFUSO. I think it has been very helpful to the committee, Mr. Robbins. In answer to your inquiry, I believe you must have something in mind. Otherwise, you would not have made the inquiry.

Do you feel that perhaps the engineering field would not get consideration in the National Academy of Sciences?

Mr. ROBBINS. I am sure they would get consideration.

I think my principal concern is that this, in effect, gives a previous screening. I would assume—and I am sorry I did not have a chance to read the revised bill previously—but I would assume that something would have to come to the President's attention that somebody was overlooked or that somebody else was to be considered, other than this list which he would get from the National Academy of Sciences. Thus you have a preliminary screening by the Academy of Sciences.

Basically, I think, while engineering is participating with the Academy of Sciences, the other engineering organizations are much more active—and undoubtedly would make recommendations to the Academy of Sciences—but are not as representative in the Academy of Sciences as they are in engineering organizations.

Mr. ANFUSO. May I suggest this, Mr. Robbins: As the chairman very well pointed out, there is really not very much difference between the language in the new section 2(a) and the language in the section of the old bill. But I think we can, in the report, Mr. Chairman, perhaps clarify the situation. If you have any suggestions to make, it could be submitted to our counsel and we could probably incorporate them into the report, saying this is exactly what we mean and from where we want the recommendations to come.

We certainly do not want you to be excluded, because, as you have well pointed out, some of the scientists that have made outstanding achievements have been engineers.

The CHAIRMAN. Of course, the scientific contributions of engineers are recognized.

Mr. MILLER. But you have so many engineering societies that you could not single out one engineering society. If you tried to list them all, you would find some conflict.

Mr. ROBBINS. I would not suggest that.

Mr. MILLER. Whom do you represent, again?

Mr. ROBBINS. The National Society of Professional Engineers.

Mr. MILLER. "Professional Engineers." If we said that we will put in the National Society of Professional Engineers, you know very well the American Society of Civil Engineers would be saying, "We are the oldest and the parent body in this field. We represent the ethical and scientific achievements in the field of engineering, while the Society of Professional Engineers has been organized to advance the economic development of engineers rather than the scientific or technical side of it."

Mr. ROBBINS. We might argue on this point.

The CHAIRMAN. Fortunately, you are represented on the committee by an engineer.

Mr. ROBBINS. I appreciate that.

Mr. MILLER. I withdraw any claim on that score. I would like the record to say I was an engineer. Prior to World War I, I followed the field of engineering and was an assistant city engineer of the city of Sacramento when I went into the service. But since then I have not followed engineering. And I am not going to presume to call myself an engineer.

Mr. ROBBINS. I agree wholeheartedly that it would not be appropriate to list any engineering society. But I think the legislation

should provide that all engineering societies can submit recommendations.

Mr. MILLER. How about the American Society of Chemical Engineers?

Mr. ROBBINS. Yes, we have 100 of them.

Mr. MILLER. So they could not possibly all be listed.

Mr. ANFUSO. Would you be satisfied if we put that in the report—that all engineering societies can make recommendations?

Mr. ROBBINS. All or any. All will not be interested.

Mr. ANFUSO. All or any. I think you might submit, if the chairman will allow, some recommendation, and we will see to what part of the bill it might appropriately apply.

The CHAIRMAN. I think we ought to include not only all engineering societies but also all other societies that cover science and not single one out at the expense of the others.

Mr. ROBBINS. Yes.

The CHAIRMAN. Mr. Hechler?

Mr. HECHLER. Unfortunately, I had to leave and did not hear all of the discussion. I would like to get back to a point you made initially about the need for workable hardware. It seems to me that the basic purpose of this bill is not so much to honor those who produced the workable hardware, as those who produce the basic research upon which we can develop the workable hardware.

Judging from what people like General Medaris, Colonel von Braun, Professor Van Allen, and others who have submitted information to this committee have said, the sands are running out on the amount of basic research we can draw on to keep America ahead.

Mr. ROBBINS. This is very true.

Mr. HECHLER. The emphasis, it seems to me, should be placed upon that, in choosing the individual to receive these awards. But I would like perhaps to hear the comments of the author of the bill, also, on this point, after you have commented.

Mr. ROBBINS. I appreciate having the opportunity to comment.

The one problem that is basic here is, How do you define what is basic research for awards of this kind and what is the application for basic research? Let me cite a specific example:

Einstein some 30 years before we developed the atomic bomb developed the basic research. But it took many man-hours and much engineer brains to put together the atomic bomb.

Who, in the cycle, developed the most outstanding contribution to this? The transistor, which is making possible mechanization and guidance systems and things which are essential to our space effort was basically developed by an engineer putting together nonscientific principles. That is why I am trying to say that engineering is equally important to the scientific effort.

Mr. HECHLER. I agree we ought to put this all in perspective. I think one of the things I was trying to get at here is that those who do develop the end product are likely to receive accolades for what they have produced, but those who toil in the laboratory on the basic research are unwept, unhonored, and unsung, and you rarely hear about their achievements.

It seems to me that one of the real purposes of this bill is to help honor those who produce the basic research which is rarely honored, because you actually do not see these results.

Mr. ANFUSO. Mr. Hechler, will you yield just a minute?

Mr. HECHLER. Yes.

Mr. ANFUSO. I wonder if the reporter can go back to the beginning of Mr. Robbins' statement. I think you missed that and I think he said very succinctly what he meant. All he asked, I believe, was that engineering be included in our consideration of the award.

Mr. ROBBINS. I can repeat them quickly.

The purpose of this legislation might be summarized in three basic objectives.

The first is to encourage scientific effort on the part of existing scientists and on the part of potential scientists, including the generic term of science engineering.

Second, to encourage individuals, particularly young people, to go into the scientific disciplines of education and to continue careers in science and engineering.

The third, and this was the one that seemed to me in the previous discussion we had perhaps lost sight of, was a mechanism of focusing public attention on the Nation's need for scientific effort and concentration on science and engineering.

Mr. HECHLER. I highly concur and I was here when you laid down those three propositions. But following this, you went into the problem of whether or not we should honor those who produce what we call the workable hardware and I was just trying to get this back into the perspective of our objective here that those who produce the workable hardware generally get honored sufficiently by the mere fact that you can see this and it is out in front, and anyone who produces anything like that is appropriately honored.

The CHAIRMAN. Mr. Miller, did you leave your proxy for this bill?

Mr. MILLER. Yes; I will leave my proxy.

The CHAIRMAN. We cannot finally pass it but we can approve it as read.

Mr. ROBBINS. May I just comment, Mr. Chairman: You spoke of basic hardware. Perhaps your terminology is wrong there. What I am concerned with is the people who toil on the scientific aspects. In effect, the line between the engineering and the sciences is becoming a very indistinct and difficult line to define. But the principle is an engineering one and many times the problem of applying what basic research has determined is a far more difficult problem than determining the research originally.

This is not a fair statement—but it is equally difficult, let us say, making it applicable and the implications for a national survival and our economy generally, is very real in that area. It is this group that is working behind the scenes with which you are concerned and they did not get the accolades of the final developments, except as they would get it through society recognition, if you will, and all scientific disciplines have a society recognizing their contributions in the scientific effort. Engineering has this same problem.

Mr. HECHLER. I think we are in essential agreement. What you are saying is, let us not overlook the engineers.

Mr. ROBBINS. Right.

Mr. HECHLER. What I am saying is let us not overlook basic research.

Mr. ROBBINS. Yes.

The CHAIRMAN. We can fix that up, as Mr. Anfuso suggests, in a report.

What is the pleasure of the committee? We have the new bill here which our counsel has drafted, and which I think is an excellent bill.

I think the suggestion by Mr. Robbins can largely be covered in the report.

If there is no objection, at this point——

Mr. ROBBINS. May I add one other thing?

The CHAIRMAN. All right.

Mr. ROBBINS. In our original presentation we suggested that this be called a medal of science and engineering. I note that this is not in the draft. We would like to reemphasize that—again for the same reasons that what we need are engineers in quantity, in numbers and from the public attention values of this——

The CHAIRMAN. Well, Mr. Robbins, we can take that up in a report there and we certainly thank you for your very fine consideration.

Mr. ROBBINS. Thank you.

The CHAIRMAN. I think that can be covered, though, in the report.

Mr. Beresford, would you care to read the bill, or amendment there?

Mr. FULTON. May I ask something first, Mr. Chairman? Have we checked other examples of Federal legislation which authorizes similar awards to see that this conforms to the pattern? If so, I would like to hear that.

The CHAIRMAN. Mr. Beresford, have you checked them?

Mr. BERESFORD. Yes, we have.

The CHAIRMAN. I might say that before you came, Mr. Fulton, Mr. Beresford indicated how this was drawn up—Mr. Beresford and counsel for the other agencies got together and worked this out.

Mr. ANFUSO. And they all agree.

The CHAIRMAN. Yes.

Mr. ANFUSO. They were particularly against a provision which would curtail the powers of the President. That is out.

If you would like to see the new bill, I do not think you will find any objections.

The CHAIRMAN. The question of creating an order is completely out. Those features are completely out.

Mr. FULTON. Does this gentleman feel the provisions are retromingent?

Mr. ROBBINS. I would have to have an explanation of that.

Mr. BERESFORD. We need a definition for the record.

The CHAIRMAN. Proceed, Mr. Beresford.

Mr. BERESFORD. Shall I start with enacting clause at this time?

The CHAIRMAN. Yes. Then I will bring up the question after we are finished with it.

Mr. BERESFORD. Following is the enacting clause.

That (a) there is hereby established the National Medal of Science hereinafter referred to as the "Medal" to be awarded as provided in section 2 of this Act.

(b) Each individual awarded the Medal shall receive an award consisting of (1) a gold medal, to be known as the National Medal of Science, of such design and bearing such inscriptions as the President, on the basis of recommendations submitted by the National Science Foundation, may prescribe, and (a) a lump-sum payment of such amount, not to exceed $10,000, as the President may prescribe in the case of each individual awarded the Medal.

The CHAIRMAN. Is there any objection to that particular paragraph? If not, it will go in.

Mr. FULTON. The question of the National Medal of Science and Engineering comes up. I think that is a good idea.

The CHAIRMAN. If you do that, here is my thought on it.

You are going to get other branches of science who want to be represented too in the title, and I think you covered that, did you not, when you made that research on the new bill?

Mr. FULTON. Let us say this, then. Why not have a silver, bronze and a gold medal. The President can award a gold medal with $10,000, a bronze medal with $1,000 and a silver medal with $5,000.

Mr. ANFUSO. I think that can be done administratively. We are just providing legislation for a medal.

The CHAIRMAN. I think it is skeletonized here.

Mr. ANFUSO. May I say this about your other objection, Mr. Fulton? Engineering is considered a science. It is the science of engineering.

Mr. FULTON. Let the committee hear the witness on that. He said science and engineering. I feel that we should have basic science in there as well as pure science. I like the idea of pure science but would like the basic science in there, too. Are we going to just award this to the Einsteins or to Joe Blow also who has done a tremendous job behind the scenes in coming up with some new electronic system?

Mr. ANFUSO. Again, I do not think we, in the legislative branch, are competent to go into that. You have a copy of the bill there. According to the bill, the President can receive recommendations from the National Academy of Sciences or any other source.

Mr. FULTON. I like that.

Mr. ANFUSO. So your distinguished President will be the one, until at least 1960, who will make the presentation.

Mr. FULTON. And then Mr. Nixon.

The CHAIRMAN. Is there any objection?

Mr. FULTON. Are we going to put in paragraph B the recommendation on the question and answer shown on page 3 that—

> on the basis of recommendations received from Government agencies and public or private organizations and other persons whose activities involve or are related to science and engineering * * *.

Mr. ANFUSO. We have changed that from other sources and we have agreed to put the main statement in the report which will amplify that. This was satisfactory to the witness.

The CHAIRMAN. And may I say further, it comes in the next section. Is there any further discussion on section 1?

Mr. FULTON. What have we decided: Science and engineering or just science?

The CHAIRMAN. Just like it is.

Mr. FULTON. Secondly, have we decided to take the word "gold" out?

The CHAIRMAN. What is the pleasure of the committee?

Mr. Fulton makes a motion that the word "gold" be stricken out and that the word "appropriate" be substituted so it would read "an appropriate medal." Is there any objection to that change? If not——

Mr. SISK. Mr. Chairman, reserving the right to object, in order to ask a question, is there anything in this bill that would preclude or would enable the President to make varying awards? I am not necessarily agreeing or disagreeing with the gentleman from Pennsylvania about bronze, silver, and gold awards. I am curious to know if we are talking about one award and one medal or are we simply authorizing the President to make such awards of such significance as he sees fit.

Is that what we are doing?

The CHAIRMAN. You are authorizing one medal to be awarded, but the amount of the award to vary in size from $10,000 on down. The President can adjust the financial contribution downward. But the medal to be awarded is one medal, and I do not think this would allow, for instance, a platinum or gold or bronze and a copper medal there. I think it would be one medal.

Mr. FULTON. It is not one medal, but many medals.

Mr. SISK. I withdraw my reservation. I simply brought it up to ask this question.

The CHAIRMAN. Is there any objection to changing the word "gold" to "appropriate medal"?

If there is no objection, it is so ordered.

Let us now take up section 2.

Mr. BERESFORD (reading):

SEC. 2. (a) The President shall from time to time award the medal, on the basis of recommendations received from the National Academy of Sciences or on the basis of such other information and evidence as he deems appropriate, to living individuals who in his judgment are deserving of special recognition by reason of their outstanding contributions to knowledge in the physical, biological, mathematical, or engineering sciences.

(b) Not more than twenty individuals may be awarded the medal in any one calendar year.

(c) An individual may not be awarded the medal unless at the time such award is made he—

(1) is a citizen or other national of the United States; or

(2) is an alien lawfully admitted to the United States for permanent residence who (A) has filed an application or petition for naturalization in the manner prescribed by section 334(b) of the Immigration and Nationality Act and (B) is not permanently ineligible to become a citizen of the United States.

(d) The presentation of the award shall be made by the President with such ceremonies as he may deem proper, including attendance by appropriate Members of Congress.

The CHAIRMAN. Is there any discussion of that section?

Mr. FULTON. I have none.

Mr. HECHLER. In line with what Congressman Fulton suggested, I wonder if it would not be simpler just to take out the word "living" individuals.

Mr. FULTON. Yes; I think so.

The CHAIRMAN. What discussion was there on that, Mr. Beresford, the question of living or dead?

Mr. BERESFORD. It was inconclusive, Mr. Chairman. The question was mentioned but I do not believe any recommendation was made by any of the witnesses on that point.

Mr. FULTON. Let me comment on that. I think the point Mr. Hechler and I have is that it must be current.

We are not going back in history, but if a man has been killed or something like that, the President may want to award a medal posthumously to him or his family.

Mr. HECHLER. I think the bill indicates it should be for something performed in the calendar year.

Mr. FULTON. No; we broadened that.

The CHAIRMAN. The award is made in the calendar year, but the achievement does not have to be in the calendar year.

Mr. BERESFORD. Dr. Bronk would be opposed to limiting the award to the calendar year.

Mr. ANFUSO. We agreed on that.

Mr. HECHLER. How far back?

Mr. ANFUSO. We can leave that to the President and the administrative branch.

The CHAIRMAN. Mr. Einstein worked out the principle of relativity and therefore is entitled to an award. But under this he would not get it. It would be limited to the living. So the achievement would have to be current within the life of one individual. Isn't that right?

Mr. BERESFORD. Yes.

Mr. FULTON. As the drafting counsel for the doctor on this one, if you look at the top of page 2, you will see "by reason of this outstanding" and you could put "current contributions" in there.

Cut out the word "living" and put in the word "current."

Mr. HECHLER. Would "current" cover people who got blown up in the course of scientific research?

Mr. FULTON. You would say "current." You do not want to go back in history to pick it up.

Mr. HECHLER. How far back does "current" go?

Mr. FULTON. The author of the bill said it would be up to the President to determine that. If we set the pattern, the administration should have the powers to make rules and regulations. I think we should put a paragraph in later on that.

The CHAIRMAN. Would that exclude someone, like, for instance, the man who invented the atomic submarine? Would that be current?

You have got to exclude——

Mr. ANFUSO. My opinion is this would be current. But then again——

The CHAIRMAN. It is not exactly current. But it has been several years since it was developed.

Mr. FULTON. You have to have a specific time limit or it is something that just the President has discretion to decide. I would say "current" is enough for a few years, that something has to be continuing. Suppose you have a team of three who are going into outer space on one of these balloon ascensions. One gets back and two get lost; under this, only one gets the award and the other two do not. If it is "current" all three can receive it and the family of the two of them can receive it for them.

The CHAIRMAN. What we are trying to reach is more or less basic science.

Mr. HECHLER. You could still blow yourselves up in a basic scientific experiment.

Mr. FULTON. One radiation shot and you are done.

The CHAIRMAN. Mr. Beresford?

Mr. BERESFORD. I was going to remind the committee that Dr. Bronk, in testifying that he would not restrict the period of the work for which it was to be awarded, described some medical research, done by an Englishman whose name I have forgotten, whose importance was not realized for some 20 years, when someone else on the basis of that earlier work provided some applications. And you remember, he said that the Nobel Prize Committee had given an award to both jointly.

If we put in a word such as "current," that might be difficult to do.

Mr. ANFUSO. I quite agree. I think, if you look at the language, it is strong enough to leave the discretion in able hands.

Mr. FULTON. Just cut the word "living" out.

Mr. HECHLER. The word "living" is what I really object to.

The CHAIRMAN. Is there any objection to striking out the word "living"? If not, it is so ordered.

We will just say, "to individuals."

I might say this to you gentlemen. The purpose of the award, too, is to serve as an inducement for further scientific contributions and further stimulus. If you start to think of making awards to people posthumously, you are not going to accomplish that.

Mr. FULTON. Sure, you will be.

The CHAIRMAN. The man who received the award will be deceased and he cannot make further contributions.

Mr. ANFUSO. I think you can leave out the word "living." Therefore you can leave it to a distinguished board.

The CHAIRMAN. Is there any objection?

Very well.

Mr. FULTON. Can you give it to the same man twice?

The CHAIRMAN. It is possible; yes.

Mr. FULTON. At the top of page 2, line 3, I think, if you are going to have "physical, biological," you will have to have "chemical" or something like that, "engineering"——

Mr. BERESFORD. Physical sciences apparently include chemistry as well as physics.

Mr. FULTON. Why do you have "biological"?

Mr. BERESFORD. Because "physical science" does not include that. That could include medical science.

The CHAIRMAN. Every witness suggested "biological."

Mr. FULTON. All right, put in "medical and biological."

Mr. BERESFORD. I think that is redundant. I do not see any objection to it, however.

The CHAIRMAN. I think it is duplication, don't you?

Mr. FULTON. People think of medical research in a certain frame of reference.

The CHAIRMAN. Why could not that be covered by explaining "biological" in the committee report?

Mr. FULTON. To me "medical and biological" are not synonymous terms. They may be to other people but not to me.

Mr. BERESFORD. They are not synonymous.

Mr. FULTON. Then why are they redundant?

The CHAIRMAN. "Biological" is more generic than "medical." It includes medical.

Mr. BERESFORD. Yes.

Mr. FULTON. If I am sick, I do not go to a biologist.

Mr. QUIGLEY. As a lawyer, I would caution the gentleman from Pennsylvania of the rule of law—once you begin to enumerate——

Mr. FULTON. That is what I am looking at here.

Mr. QUIGLEY. That is why, as soon as you mention one, you exclude the others.

Mr. ANFUSO. As soon as you mentioned "medical" a lot of thoughts ran through my mind.

I was thinking of surgery as not being medical.

The CHAIRMAN. I think agricultural should be in here. There is a billion dollars spent in agricultural science.

Mr. FULTON. If an enumeration is bad, and we get into these questions, as Mr. Quigley says, we should go back to more general wording, for example, science, research and development, or in the field of science, research, and development.

That takes in basic science, pure science and applied sciences, engineering. So I would just say in the field of science, comma, research and development, and let it go at that without trying to enumerate. I accept Mr. Quigley's suggestion.

Mr. ANFUSO. What kind of research?

Mr. FULTON. That is up to the President.

The CHAIRMAN. We are trying to write a bill. Three or four competent attorneys went over this very carefully. We have to submit it to the Bureau of the Budget.

Mr. FULTON. But Mr. Quigley's point is good. I am changing my mind.

Mr. ANFUSO. He is talking about medical and, if you start enumerating medical, you will have a lot of branches brought in, including surgery and things of that kind.

Mr. FULTON. How does the witness feel?

Mr. ROBBINS. I come back to our basic objective, to emphasize the need of the physical sciences. When we start including all these others it seems to dilute the emphasis on the physical sciences.

Mr. FULTON. Then why do not we just say "physical sciences, research, and development."

How do you feel about that, Mr. Beresford?

Mr. BERESFORD. First, Dr. Waterman suggested the word "physical, mathematical, biological sciences."

We then added "engineering sciences" so it now reads "physical, biological, mathematical, or engineering sciences."

That was meant to be inclusive.

Mr. FULTON. Then put research and development in at the end and I am satisfied.

The CHAIRMAN. I would object to research and development. There is over $10 billion worth of research and development in this country. It would defeat the purpose of the bill.

Mr. FULTON. I am surprised at that. I thought every one of the sciences was engaged in research and development.

The CHAIRMAN. There are a lot of people who are engaged in it who are not scientists and not entitled to the award. When you get down to that you cover millions of people.

Mr. FULTON. Let us go on the next one. I was amazed that the bill is going to exclude anybody and I want it noted in the record if it excludes anybody engaged in research and development.

Mr. ANFUSO. No, it did not say that.

Mr. FULTON. You say it gets in there this way it will.

The CHAIRMAN. All in favor of putting in "research and development" make it known by saying "aye."

Mr. FULTON. Aye.

The CHAIRMAN. All opposed.

(A chorus of nays.)

The CHAIRMAN. The nays have it.

Mr. FULTON. Let us ask the question another way. The chairman said it would defeat the purpose of the bill to include research and development. I seem to disagree with that, but I am the only one.

The CHAIRMAN. The next paragraph.

Mr. BERESFORD (reading):

SEC. 3. Notwithstanding any other law of the United States, or any law of a State, Territory, Commonwealth, or possession of the United States, no part of the sum referred to in clause (2)of subsection (b) of the first section of this Act shall be assignable, or be subject to any tax or garnishment, attachment, or other legal process, under any circumstances whatsoever, nor shall the payment thereof be anticipated.

Mr. FULTON. Is that the usual provision?

Mr. BERESFORD. Yes. It is a standard provision.

The CHAIRMAN. Any objection to that? If not, it is adopted.

Mr. BERESFORD. Section 4:

There are authorized to be appropriated such sums as may be necessary to carry out this Act.

The CHAIRMAN. Is there any comment on that?

(No response.)

Any comment on the entire bill?

Mr. FULTON. Is that for authorization in the usual form or should we have language "as may be appropriated from time to time" as the Appropriations Committee changes its mind on that kind of a provision?

The CHAIRMAN. Personally, I would rather not get into that question of annual authorizations. I think this is one bill where you can have a general continuing authorization of so much a year.

We do not have to authorize any specific amount because it is not to exceed 20 designations in any one year and that would be $200,000 a year, the maximum, and the number of awards will depend on the President, and again upon the Appropriations Committee and the Congress in putting up the money to cover the awards.

Mr. FULTON. The question is to clear it with the Appropriations Committee counsel, so that we are not in any kind of dispute on language, between annual appropriations and continuing appropriations, with the Appropriations Committee. I do not want it. So, it is not just who is right or wrong, but I just want to be sure the language is acceptable.

The CHAIRMAN. Is there any objection to clearing with the counsel for the Appropriations Committee?

No objection.

We cannot actually vote out the bill this morning but we can approve it and have it ratified tomorrow morning.

I might say for the purpose of those who were not here when we were opening the meeting that the Secretary of the Army will be here in the morning to present the Army flag to the committee, with the streamers and so on. I expect a full attendance and in the meantime we can take up this bill.

Have I heard a motion?

Mr. ANFUSO. I move that we approve the bill as amended this morning.

Mr. FULTON. I second it.

The CHAIRMAN. You have heard the motion.

All in favor say "aye."

Opposed? The ayes have it. It is unanimous.

The bill is approved, then, with two minor changes—striking out the word "living."

Mr. ANFUSO. I want to thank you, Mr. Chairman, and all the members for the adoption of this bill and I want to say now, for fear Mr. Fulton might have objected before, this bill does not provide any award for any Congressman who makes any discovery.

I am afraid the gentleman from Pennsylvania might win it.

The CHAIRMAN. We will take it up formally and bring it up again tomorrow.

Mr. Beresford, do you have the other bill?

Mr. BERESFORD. No, I do not.

The CHAIRMAN. Mr. Ducander?

Mr. DUCANDER. You mean the bill scheduled for tomorrow?

The CHAIRMAN. Yes.

Mr. DUCANDER. It is scheduled for tomorrow.

The CHAIRMAN. This concludes everything we had this morning. I thought this next bill, which is a small bill, too, was scheduled for this morning. But it is not, so we have concluded our work. And I thank you.

Mr. FULTON. May I say to the Chairman, he has done a very good job, as well as the rest of the committee, so I think it is going in the right direction.

Mr. ANFUSO. I agree. The Chairman deserves a great deal of thanks for the way he has managed this bill. He deserves it.

The CHAIRMAN. Thank you, gentlemen, for your plaudits.

The committee is adjourned until tomorrow morning at 10 a.m.

(At 11:05 a.m., the committee adjourned.)

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